Framework for the Adoption of Online Banking

PhD Thesis

Tagreed Alsulimani

Software Technology Research Laboratory
Faculty of Technology
De Montfort University
Leicester- United Kingdom

This thesis is submitted in partial fulfillment of the requirements for the Doctor of Philosophy.

June 11, 2013

Abstract

Information technology represents the most important tool for any business to grow and increase profits in this century. Online banking represents one type of business change due to revolutionary changes in technology. There are limited studies for adoption of online banking in Saudi Arabia which is one of the largest economies in the world. For that reason my study focused on the adoption of online banking by countries in general and particularly in Saudi society. In many situations there is a gap between business and information technology. In particular there is a crimson between online bank users and technology. It is necessary to bridge this gap In order to achieve online banking targets. My study investigated the different reasons for the gap its formation (between online banking and information technology) and how to bridge it. This research is focused on the different factors that enhance the adoption of online banking services through general users. This framework was established by drawing from several theoretical studies. The proposed research framework contains the most important factors for online banking. These include the following hypotheses; (H1) personal information, (H2) personal experience, (H3) disposition to trust, (H4) reputation, (5)trusting belief, (H6)structural

assurance and (H7)perceived site quality. These hypotheses were tested experimentally through a questionnaire which was analyzed using SPSS Version 14 program. The results showed that (H1) personal information, (H2) personal experience, (H3) disposition to trust, (H4)reputation, (H5) trusting belief, (H6) structural assurance and (H7)perceived site quality are positive factors affecting customer adoption of online banking. There was a significant correlation between the different online banking adoption factors or hypotheses and the personal information (age, gender and education) with P values of <0.005 in most of cases.

Dedication

To my Father

Sadeek Al-Sulimani

For encouraging me beyond this PhD, thank you my dad for everything you have Done.

To my Husband

Salah Menshawi

Thank you my husband for your patience and support throughout my research.

Declaration

Declaration This thesis is submitted for the degree of Doctor of Philosophy at the Faculty of Technology, De Montfort University, UK. I declare that the work described in this thesis is original. This thesis has been written by me and produced using LaTeX.

Tagreed Al-Sulimani

Acknowledgement

First of all I would like to thank **ALLAH** the almighty who gave me comfort at the difficult times during this study without which I would not be in this position at all.

I also would like to thank my first supervisor, Professor **Hussein Zedan**, for his guidance, advise and the many new ideas he shared during my meetings with him. Without his support and encouragement this thesis would not be complete. I am so happy that I achieved my thesis under his supervision.

I also would like to thank my father **Sadeek Al-Sulimani** who pushed me forward and made many sacrifices for me. I owe you father. May ALLAH reward you.

Also I would like to thank my mother **Nawal Halwani** for her support and prayers since the start of my studying until she passed away from this life. Thank you my Mum, I miss you so much.

Moreover, my special thanks to my ardent husband **Dr.Salah Menshawi** for his love, encouragement, prayer, support, trust and care through out this study.

I am grateful to my husband for all of this time and patience; sharing both my sad and my happy times even when he was far away.

I am also extremely thankful to my children **Rayan, Yara, Lara and Khalid** who supported me and excused me when I was busy during my research.

I would like to thank my dearest **sisters** for their constant prayer and everyone else not mentioned. Last but not the least I am also obliged to thank all colleagues and the team of Software Technology Research Laboratory Department **(STRL)** for their cooperative and friendly support to me especially **Mrs Lindsey Trent, Lynn Ryan Antonio Cau, and François Siewe** who helped many times in my thesis.

Conferences and Posters

1. Women in Computing Research 2010 London Hopper Colloquium, 4th May at BCS HQ, London.

2. Forum of the second Saudi students in the United Kingdom, Ireland, Saturday, May 21, 2011, Coventry United Kingdom.

3. Fifth Saudi International Conference SIC 2011 (June 23-26, 2011 - The University of Warwick - Coventry, United Kingdom).

Contents

List of Figures

List of Tables

Chapter 1

Introduction

Objectives

- Motivation and rationale for conducting research
- The gap between business and information technology
- Purpose of research
- Research question
- Organization of thesis
- Measure of success
- Contribution to knowledge

This chapter provides a description of the back ground and rationale for carrying out research and describes different issues and problems to be addressed. It also provides a description of the research purpose,the questions being addressed in the research and the significance of the study.

1.1 Motivation and rationale for conducting the research

Information technology represents the soul of any business in the 21st century. The evolution of the digital world has been combined with evolution in business, and business organization in the last ten years; this completely changed according to the technology. Businesses such as banks operated through branch outlets and due to the revolution and evolution of e-banking technology.

However, there is always a gap between business targets and information technology [136]. This gap can be reduced or minimized when positive inks are formed between information the technology team has and the business team [30]. Information technology companies throughout the world spend millions of pounds to deal with business requirements through updating and releasing new programs and software [27, 77]. In addition, worldwide market places operate according to the philosophy of globalization and the high speed of information technology changes force businesses to adopt the technology. The number of customers for online services represents the most important factor for any business to be successful.

1.2 The gap between business and information technology

Information technology (IT) represents the most powerful method for bank business growth. The alignment between IT and bank targets will expand the bank business globally and increase its profits. The problem between business and information technology appears when misunderstanding of business targets by the IT department exist [114]. Usually a loss of communication between the business and the IT departments leads to a "gap" forming [102]. Similarly there is always a gap between the adoption of technology and bank users. This gap needs to be bridged or eliminated to enable the bank to reach its goals [21]. This research is focused on the different factors that enhance the adoption of online banking services for users generally and particularly for those in Saudi society. There is very limited data about online bank adoption in Saudi Arabia. By focusing on the different parameters that enhance the adoption of online banking by customers. This study can use

the proposed research framework to achieve the banks goals.

1.3 Purpose of the research

The main purpose and contribution of this research is to understand the adoption of online banking services by customers and to investigate the issues that enhance or impede the likelihood of online bank customers using the service. This will be done through examining the relevant theoretical concepts, studying the co-evolution between business and information technology, and the gap formation between the two entities namely online banking systems and users, the study also examines the reason for this gap formation, different online banking models and hypothesis and factors that affect customer adoption of online banking services.

The research goals are:

- To develop a theoretical model for online banking adoption.
- To study the different factors affecting the customer's adoption of online banking services.
- To develop a framework for online banking adoption.
- To evaluate the framework through investigating the different hypotheses used.

This research focuses on the online banking environment and customer's adoption of it in Saudi society. To the best of the knowledge this is the first study made about customer's adoption of online services in Saudi Arabia. This framework will help to increase the numbers of customers through clarification of the different hypothesis that positively enhance adoption of online banking services.

1.4 Research Question

The research poses a fundamental question: Can the study co-evolution between users and online banking assist in bridging the gap between them?

This question leads to further sub-questions such as:

- What are the theoretical concepts for this adoption?
- What are the factors that affect this adoption?
- Can these factors be used to understand and enhance online adoption?
- Can this research framework be examined experimentally?
- Will the positive impact on online banking adoption lead to a successful co-evolution between information technology and online banking?
- What is the proposed research framework for customer's adoption of online banking on Saudi society?

To answer these questions we need to investigate the different hypotheses and models for online banking adoption. In addition, we will study different online banking security models,online banking trust models and factors enhancing online banking acceptance.

1.5 Organization of the thesis

The first part of the Research begins with a literature review about the gap between business and information technology and rate of evolution,the essential properties of co-evolution and types of co-evolution,the legacy system and the gap formation,and process of information system evolution.

The second section gives a definition of online trust and describes trust factors in various contexts including,Website contents,for and online banking. These factors include: trusting beliefs, dispositions to trust, institutionally based trust, situational normality, general web experiences, trusting intentions ,bank reputation, bank familiarity and perceived site quality.

The third section considers online banking hypotheses which include security models for e-banking,online banking, the extended theory of planned behavior, innovation diffusion theory and the 'decomposed'theory of planned behaviour.

The fourth proposed framework for online banking adoption is made according to the literature review and previous studies for different online bank hypotheses. According to this framework the questionnaire was designed and distributed to online banking users in the Saudi community.

The fifth (section) is about the results and findings. This contains personal information (age, gender, education,bank name and online bank account availability), all the hypotheses which build the framework that was studied including personal experience (access to online bank accounts,time access for online bank account and the number of years using the internet), disposition to trust (personal ability to trust, e-banking trust in case of fraud and bank website reliability), reputation (online bank service, sources for online bank services and bank reputation), trusting belief (e-bank and its commitments, e-bank and business performance and transaction through the bank), structural assurance(technology assurance,important factors for customers using a bank Website, participants for online customers, security measures and safety,e-bank participation and Website, bank Website information and reliability, Website information and customer assurance, logon process and security,bank Website and trust,Website structure and customer feel,factors increasing online trust, continuous modification of the Website and trust,online transaction and time) and perceived site quality (trust meaning to the customers, bank Website and trust,bank Website and errors, Website reflecting trust,Website quality and users trust, bank logo will indicate the legal Website, distinguish between the imitation and the original Website, professional Websites and trust). Hypotheses were investigated and analyzed and results are given at the end of the (chapter).

1.6 Measure of success

1. framework has been developed to answer research question
2. This revaluation showed that framework is better than others

The measure of success is that this research " Framework is supporting the co-evolution between online banking and information technology. " This framework resolve the fundamental research question

- What are the theoretical concepts for online banking adoption?
- What are the factors that affect this adoption?
- Can these factors be used to enhance online banking adoption?
- Can thise research framework be examined experimentally ?
- Will the positive impact for online banking adoption lead to successful co-evolution between information technology and online banking).
- What is the proposed research framework for customer's adoption for online banking services on Saudi society?

1.7 Contribution to Knowledge

The major contribution of this research can be summarized as follows [9].

- The development of an evolutionary framework between users and technology through determining the online customers' requirements which will enhance the co-evolution process between the two domains (users and online banking system).
- The develop framework improve the co-evolution for users and online banking system [9].

Chapter 2

Literature Review

Objectives

- The gap between business and information technology and Rate of evolution
- Essential properties of co-evolution and types of co-evolution
- The legacy system and gap formation
- Process and forms of information system evolution
- Steps of information system co-evolutionary plan
- define of online trust and different factors effecting it
- investigate different online banking models

2.1 The gap between business and information technology and rate of evolution

Businesses are always facing difficulty in rapidly changing their requirements according to many factors such as competition and customer trends. [93]The challenge for business is to have the ability to manage rapidly changing requirements and to implement the new changes with effective less time and less cost. Information technology integration represents the main key to enable the business to rapidly adapt

to changes.

The major problem in business and IT co-evolution is characterized by the presence of a gap between business evolution and technology. This gap is mainly due to the loss of balance between the information technology and the business domain. An example of this gap is represented in Figure (2.1) For successful co-evolution between any business and its information system this gap needs to be bridged in a way that results in effective technological interventions [93]. (Figure 2.1)

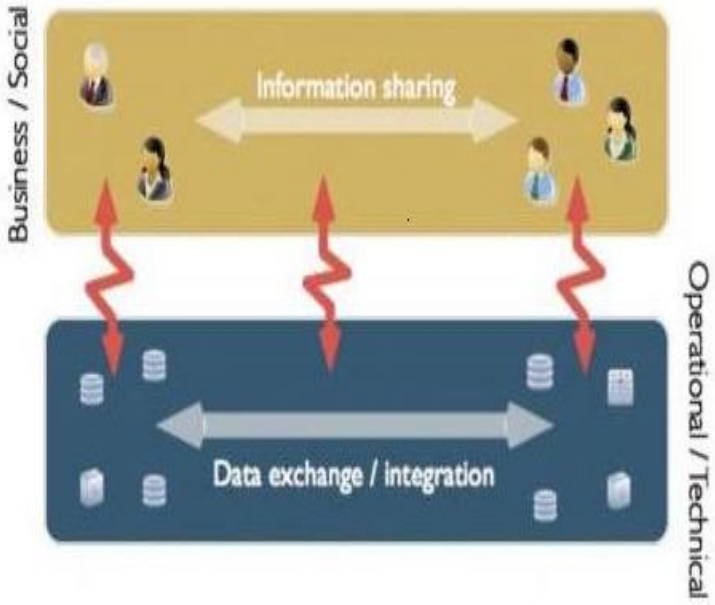

Figure 2.1: Gap between business and information technology [30]

The cultural environment (behaviorus, thinking and interacting) is playing an important role in this gap development. In cultural theory there are five different archetypes of human kinds. These are the hierarchist (who hase the power and authority), the individualist(who has his own means of thinking and behaviour), the egalitarian (who believes that people are equal and have the same rights), the fatalist (the person with no positive action) and the hermit (who is isolated in his environment) [136]. If the hermit term is applied to IS professionals and the hierarchist is applied to the business strategy this may explain the lack of understanding between the two domains and the way this gap occurred [136].

It was suggested that this gap can be bridged through three inexpensive steps which are to consolidate, standardize and communicate (Figure 2.2). The first step is to reduce the required resources to complete the work 'consolidation'. The second step is 'standardization' or the creation of profiles for business processes and services through applying the services to the business requirements. The last step is to enhance the 'communication' between the business and IT through ensuring that the IT evolution is due to the business strategy and requirements. These three steps may reduce the gap between business and IT co-evolution[144]. (Figure 2.2)

Figure 2.2: Steps for Bridging the gap between information system and business [144].

There is strong agreement that large projects in business and IT fail more than they succeed which may be due to misunderstanding of the nature of the problem [46] [59, 93]. If the business requirements were set according to the business strategy and the IT was installed to meet the business requirements successful co-evolution will be achieved. The failure in this co-evolution process suggests that it may be due to human factors as business and information technology are human social systems. The gap problem arises more when communication between the business and technical staff is missing. The gap may be developed if the technology is working well but the business factors are not aligned with the change, sometimes business factors are in place but the technology is not aligned with the change [93]. However, in

many situations both technology and business are in the right place but unexpected exogenous factors change (e.g. the global economic crisis).

2.2 Rate of evolution

In biology the rate of evolution is a measurement of the change in an evolutionary lineage over time [117]. This rate of evolution is proportional to its genetic variations at that time [35].

In business the rate of evolution must occur with the same rate that the usable variations become available in the form of new knowledge networking and skills. On the other hand evolution in a changing competitive environment for the business or complex adaptive system (CAS). requires an information system that is frequently realigned to bring the business up to date with its strategic changes. This requires continuous improvement for the technical and business skills for IT staff in addition to strong IT skills among business staff. Any business requires being brought up to date with the rapid external changes in the IT environment due to the huge demand of the information technology business by the users. This requires changeable system needs to be adapted with the evolution of the business and its co-evolving changes [11].

Business evolution requires a knowledge which has been changed over time to develop and maintain competition [75]. In the 20th century there were three stages for business knowledge. The first stage was developed by Fredrick W. Taylor during the 1950's. Taylor was concentrating on improving the internal-production and managerial processes. He was studying the time required for each individual worker to complete a step of work and by rearranging the equipment he estimated the average work that can be produced under optimal conditions. Taylor's study increased the average work undertaken without increasing the cost. [131].

Due to the increase in competition between businesses the second stage for business knowledge was established by Michael Porter during the 1980's . This second

kind of business knowledge was described in a 'five forces model'. Porter's concept includes the relationship between competitors within business, potential competitors, suppliers, buyers and alternative solutions to the problem being addressed. This framework of the 'five forces model' gives a better understanding of how the business is operating and indicates that these five competitive forces determine the long-term success and competition for the business [68].

The third stage of business knowledge (which is used currently) focuses on understanding the socio-cultural and bio-physical dynamics of the organizational environment. and how to employ the sciences of complexity to develop a strategic plan for innovation [75].

Information technology developed a link between an increase in the number of users and the enhancing value of networks [145]. However, information technology is not only responsible for the successful of business targets but also has a positive impact on business structure and behaviour. Information technology can also change the type of business e.g. e-commerce [75]. The rate of evolution in the business is influenced by business behaviour. Businesses which act as living organisms are more absorbtive of change and react to the information technology in an evolutionary way while, those businesses that act as machines are unlikely to do the same and are less sensitive to unexpected changes [75] .

Alignment of information technology with business plays an important role in the business evolution rate. It was suggested that the strong alignment between information technology and business objectives has a strong impact on the rate of evolution [69]. This includes alignment between business and information technology strategies and planning, information technology and business infrastructures and integration of information systems and business domains [11].

The applications of information technology in business are not limited to shop floors but are used for other non-production processes such as product design, online sale and after sale service. Information technology can significantly add to an extension in product quality and product differentiation and support the competitiveness of business [36].

E-business or e-commerce is an important example in how technology increases the rate of business evolution. E-business changes the concepts of business localisation to worldwide business. E-business also aims at helping adopters reach new customers more and effectively. E-business transforms the exchange of goods, services, information, and knowledge through the use of IT. The adoption of information technology in general and e-business particularly in small and medium size enterprises (SMEs) or businesses shows a reduction in business costs and improves professional electronic markets [27, 77].

A study was conducted to examine more than 900 SMEs in East European and Cyprus it found that SMEs established their websites to take advantage of cost reduction, easy search of new markets, and to increase competitiveness. The percentages of SMEs that use e-business are 67% in Poland and 87% in Cyprus [27]. E-businesses represent the centre of technological polices for SMEs [38]. The scale of the impact of international e-commerce is likely to be felt more in developing countries and the adoption of the internet by SMEs is higher than that in larger sized enterprises [56].

As defined earlier, the rate of evolution in business increases where the business changes become available in the form of new knowledge, networking and skills. It can also be defined as the ability of business to expand and gain more profits with the support of an integrated information system. The rate of evolution in business can be measured by obtaining the increase of profits as mentioned earlier in the cases of Tesco. Zedan et al., 2001, mentioned that evolution is the trigger for change in both business and technical requirements [154] .

In business there are mainly four factors which enhance these changes. These include. politics, organisation, economy and technology [10, 42, 103, 129, 140] .

1. Politics: can change the managing structure for the organisation, the way organization goals to are achieved[140].

2. Change in organization size: merging or splitting will change the business [10, 42, 103, 129, 140].

3. Economy: is one of the most relevant aspects of the socio-cultural context in which businesses operate and any change to the economy will change business e.g. during the current world economy crisis many businesses are closed or have reduce their staff to reduce their investment. For example, British Air ways asked 30,000 employers to work for one week to one month unpaid to help the airline survive in the global economic crisis [10, 37, 140].

4. Technological changes: can enhance the information processing ability in the organization e.g. in medical services the technology provides the physician with all the informations he requires for the patient which may include their medical history [140]. drugs prescribed blood test, results, and so on all of which give a clear idea about the case diagnosis and possible treatment plan. In summary technology involves three factors: performance, computing paradigms, and versions. and new technology release.

Business needs or business requirements are described by the formula:
Needs $\rightarrow$ Solutions This need indicates specification for the solution and the solution is built according to the specification so the above formula becomes: Needs '$\rightarrow$ Specification '$\rightarrow$ Solutions

According to the above formula Zedan proposed Knowledge Mediator [154]. a framework (K-Mediator) in which the co-evolution can be studied and analyzed along a continum from identifying business needs to decision making to the stage of selecting appropriate software [135].

This framework acts as a mediator between the business and technology. It represents the first step to identify the business requirements and its software solutions. The advantage of this framework is that it reduces errors that may occur when articulating requirements through an engineer, it is responsible for creating new ideas by utilizing the business resources and reconfiguring software applications from those resources, It also shapes the way business and technology goals evolve and in addition it controls the evolutionary effects [154]. (Figure 2.3)

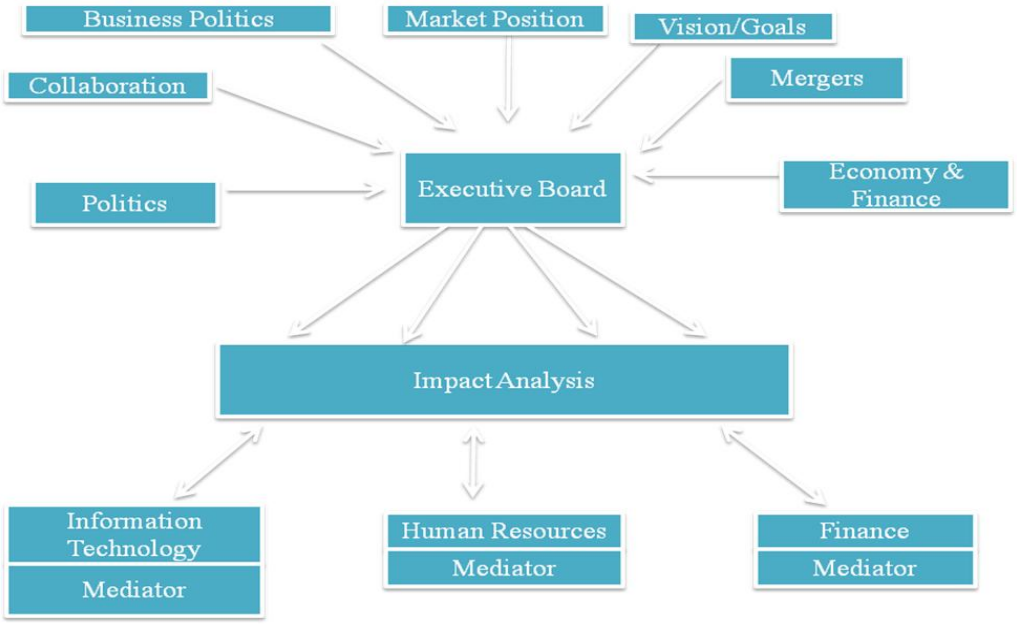

Figure 2.3: Knowledge Mediator Framework [154].

2.3 Essential properties of co-evolution and Types of co-evolution

There are mainly five essential properties of co-evolution multi-levelness, multidirectionality, nonlinearity, positive feedback, and path and history dependence [80]. For multi levelness it was suggested that the co-evolution occurs at multiple levels of analysis; micro-co-evolution occurs in an internal business environment and macro-co-evolution which occurs between businesses and their environments [85, 139]. Previous studies found that the ability of the organization or business to macro-evolve with its competitors depends on its micro-co-evolutionary processes [97].

Multidirectional properties occur because the organizations co-evolve with each other in a continuous way which changes the environment. [67] the distinction between the dependent and independent variables is very complex as it is affected by endogenous effects (multi-directional causality).

Nonlinearity for the co-evolution indicates that under certain conditions, a small action may have a very large effect which is termed as "butter fly effect." On the other hand, a small change in one part of the organisation may contributed to a large effect in another part of the organisation. In a nonlinear system it is very difficult to predict exactly what will happen in a complex system such as the organization [60].

The positive feedback for the co-evolution as mentioned earlier, is that the co-evolution concept indicates that the evolution of one entity is influenced by other entities' evolution, the CAS is influenced by the environment and the environment is also influenced by the CAS [146]. This idea can be applied to the information technology as the business strategy influences IT and IT in turn influences the business strategy [60].

The path and history dependence for co-evolution. is suggested to be due to the heterogeneity between organizations which explains their variations in adaptation [80, 96]. An example for a co-evolutionary information system model is given in (Figure 2.4)

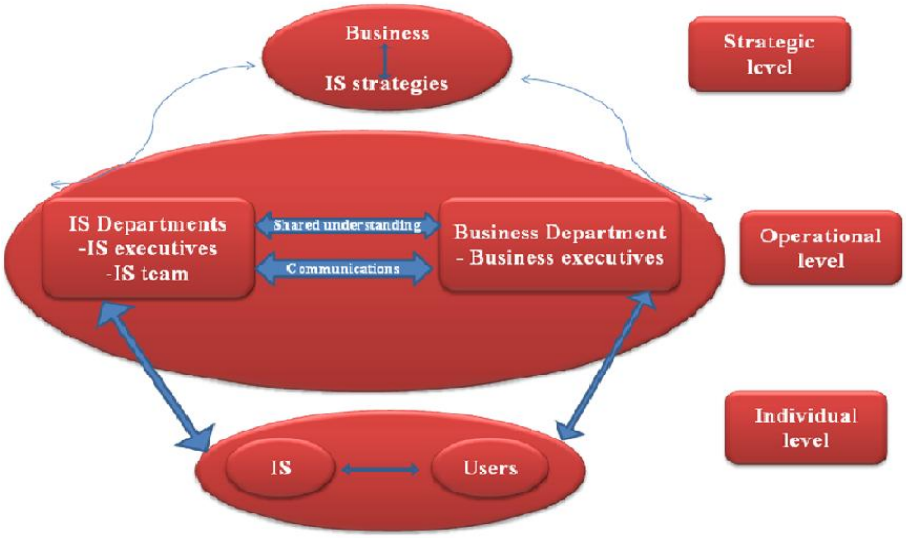

Figure 2.4: Co-evolutionary information system model [11]

The co-evolutionary information system model (Figure 2.4) consists of three levels.

These are: the strategic level, the operational level and the individual level.

- **At the strategic level**

there is co-evolving and adaptation between the information system and business strategies. This indicates that any changes in business strategy will lead to change in the information system strategy [11].

- **At the operational level**

there is co-evolving between business and the information system department. Any successful business requires cooperation, communication and understanding between business and information system representatives. Any misalignment occuring between business managers and planners of the information system will lead to failure in business targets [11].

- **At the individual level**

it is well known that an effective information system infrastructure should be aligned with individual users 'requirements and needs [11]. System users usually think they are professional individuals using the computer to interact with others. This feeling may enhance their resistance to change regarding any new implemented system. To coopt this resistance to change, information system representatives should encourage users to use the new implemented system and suggest ides about the system which will lead to the success of the information system and the business[11, 63].

2.4 Types of co-evolution

According to Tivnan, 2005 [137] there are mainly five types of the co-evolutionary dynamics which include:

1. Mutation rate and the environment: this focused upon the inter-dependence between the rates of change (evolution) of an organism (or businesses such as banks) and their environment (business context)[137].

2. Predator / prey: this describes the respective rates of change (evolution) of competing populations (or businesses) [137].

3. Supernormal: describes the non effect of a favoured characteristic such as a tag governing the interaction of agents within a population (or business)[137].

4. Inbreeding and population size: rapidl inbreeding within a small population (business) leads to the isolation of the small population (business) from other populations (or businesses); the more isolated the population (business), the more likely inbreeding is to occur and lead to further differentiation (in businesses)[137].

5. Symbiotic co-evolution: it describes the cooperative and mutually beneficial interdependence of two dissimilar agents (e.g information technology and business). However, the organization (business) must learn faster and more effectively than its competitors and to increase the speed of this learning to maintain its competitive position [137]

2.5 The legacy system and gap formation

The term 'legacy system' is not used to describe an old system but a new system that quickly becomes a legacy system when it does not meet business requirements and becomes unable to support the business's evolution[55]. Legacy systems are inflexible systems that no longer support the current business objectives and inhibit the future developments of the businesses [55]. Legacy can be seen as a gap between the information system and business domain if the balance between the two entities is lost [114].

The legacy problem is not only related to technological issues as there are several factors contributing to the legacy problem. These factors include business, organisational and technological factors [102]. mentioned these factors in a bank case .

- For business factors: Changing in a business environment is very important in order for the business to compete . These changes have a clear effect on

the bank infrastructure technology and contribute to the legacy problem. For example, opening new branches of the bank in different regions will decrease the technology budget and new applications of technology will be built on the old system which will contribute to the legacy issue [102].

- For organizational factors: The legacy problem was found to be related to the human and organizational environment[55]. Organizational culture and regulations were found to play an important role in the gap between business and technology. The development process for the information technology applications faced a difficulty in that there was a great demand for these new applications and new application developers are under time pressures which make the system leads developer to take short cuts [102]. This may make the system application and maintenance very complex. As mentioned earlier, there is a communication gap between the developer and users of the system which are due to misunderstanding each other. The lack of skills to maintain the legacy system is another problem. Resistance to change and the difficulty of working with a new system are important issues in the organization and it can become clear among older staff that the young staff are very keen to use the latest systems available [102].

- For technological factors: The rapid changes in technology which require bringing the system up to date represent a pressure on management has an objection to the cost of the system change requirements [102]. Old infrastructural systems always fail to keep up with the new business requirements. The alignment between the existing system and the new system is usually very difficult [102]

.

2.6 Process and forms of information system evolution

According to Ramage, 2006 the information system evolution may be according to the organizational or business plan's 'planned evolution' or due to environmental

changes 'unplanned evolution' changes [113] .

In planned evolution the evolution processes occur according to the organizational decision-making process and fit with the organization strategy and timescale. This evolutionary type is not ready for unexpected events but it is set for the routine requirements of the organization.

Unplanned evolution occurs without any organizational anticipation. This type of evolution occurs due to the changes in the organization's staff or employees with the subsequent result that their skills and knowledge are lost to the organization [113]. The Organization itself changes by merging/ or splitting, or by opening new businesses in different regions, management may change which will affect many decisions. technology may also changes due to upgrades of hardware or new applications becoming available [113]. All the previous circumstances can change the integrated information systems in the organization. The framework for planned evolution occurs through four stages (Figure 2.5) [113].

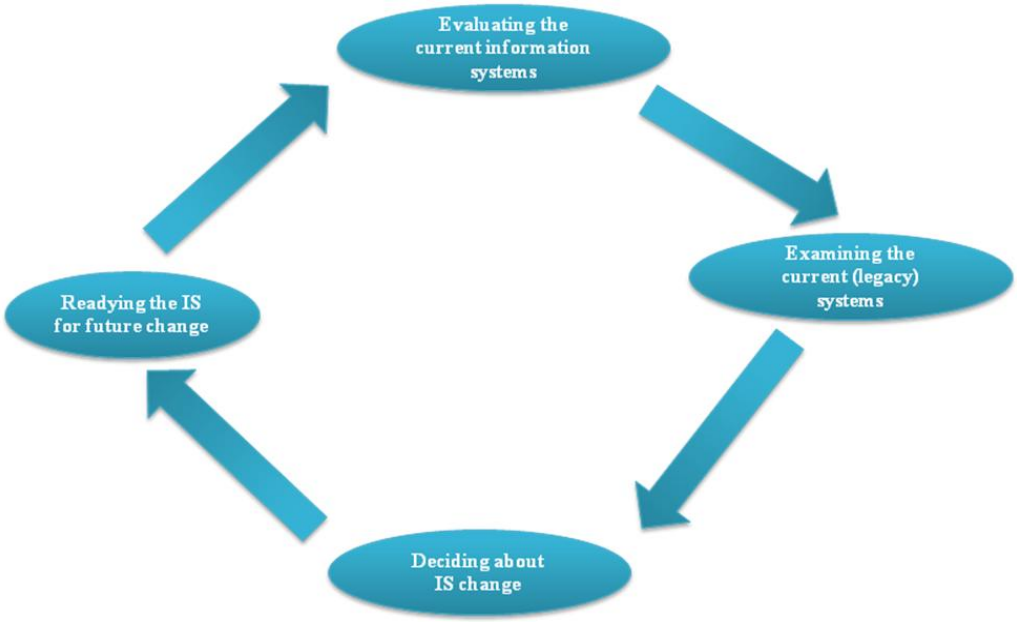

Figure 2.5: Framework for planned evolution [113]

The first stage is to make an evaluation of the current or present information systems, the second stage is to examine the current (legacy) system, the third stage is to make decisions about information system changes and the last stage is readying

the information technology for future change. However, this framework is a simple example in which more stages may be introduced or reduced according to organizational requirements [113] .

2.7 Online trust definition

Trust has been defined by many authors. It has been defined as a behaviour[92]. ands one of the most definitions of trust is that it is a psychological state comprising the intention to accept vulnerability based upon positive expectations of the intention or behaviour of another under conditions of risk and interdependence" [120]. Trust is also referred to as the willingness to rely on and hav a positive attitude towards others[130]

Online trust has been defined as the willingness of a consumer to be susceptible to the actions of an online store dependant on the expectation that the online store will perform a particular action which is important to the consumer, irrespective of their ability to monitor or control the online store[92].

2.8 Website contents and trust

In general there are mainly five important points which must be present in a website [89]. These include :

1. **A professional layout for the website** If the website has a poor or older design the customers will not feel free to participate or to do business or transactions through it.

2. **FAQs, detailed specs and descriptions and comments** Customers requiring some information about the website may ask some questions which require answers which should be present in the website as and when they are required.

3. **E-mail address** The website must contain e-mail addresses to provide customers with the ability to contact someone for help (i.e. customer support).

4. **Customer comments area** Positive comments from customers about their experience with a website service will increase trust for new users.

5. **Feedback:** It is very important to have feedback from the customers about their experience with the website. This can be used to improve the service and to determine any defects in the services which offered.

2.9 website and trust factors

Many authors have studied the factors which affect customer's trust for online services. A previous study on trust dimension in e-commerce which was made through distributed questionnaires and interviews with online customers. proposed a customer orientation model (Figure 2.6)[12] .
This model suggested that there are six important factors to enhance customer trust for online services. These are:

1. Privacy and security of information: Online companies (such as banks and Universities) must indicate that customer information is secure and will not be passed to third parties. This will be supported by use of appropriate technology [12].

2. Website contents: Online services are not trusted due to customers missing face-to-face communication. To overcome this issue the website contents should be established to indicate customer requirements, the website should be very simple to use and easy to access and it must be free from any faults (the text must be free of mistakes in grammar or spelling). It is recommended that the website must contain graphics to explain and summarise difficult information[12].

3. The website should contain a link for customer enquiries which provides quick feedback [12].

4. A service or product provided by the website must be provided to a high standard.Furthermore, the product provided must be adapted to the customer's preferences (e.g. price, brand, discounts, etc) [12].

5. It is suggested that a website reputation can increase customer confidence concerning the security measures of the website [12, 17].

6. Website Vendors: Vendors must have enough experience to attract and convince e-customers (e.g. provide a riskfree environment, a money back guarantee, etc). All these factors have been suggested as ways to improve customer trust in a website.

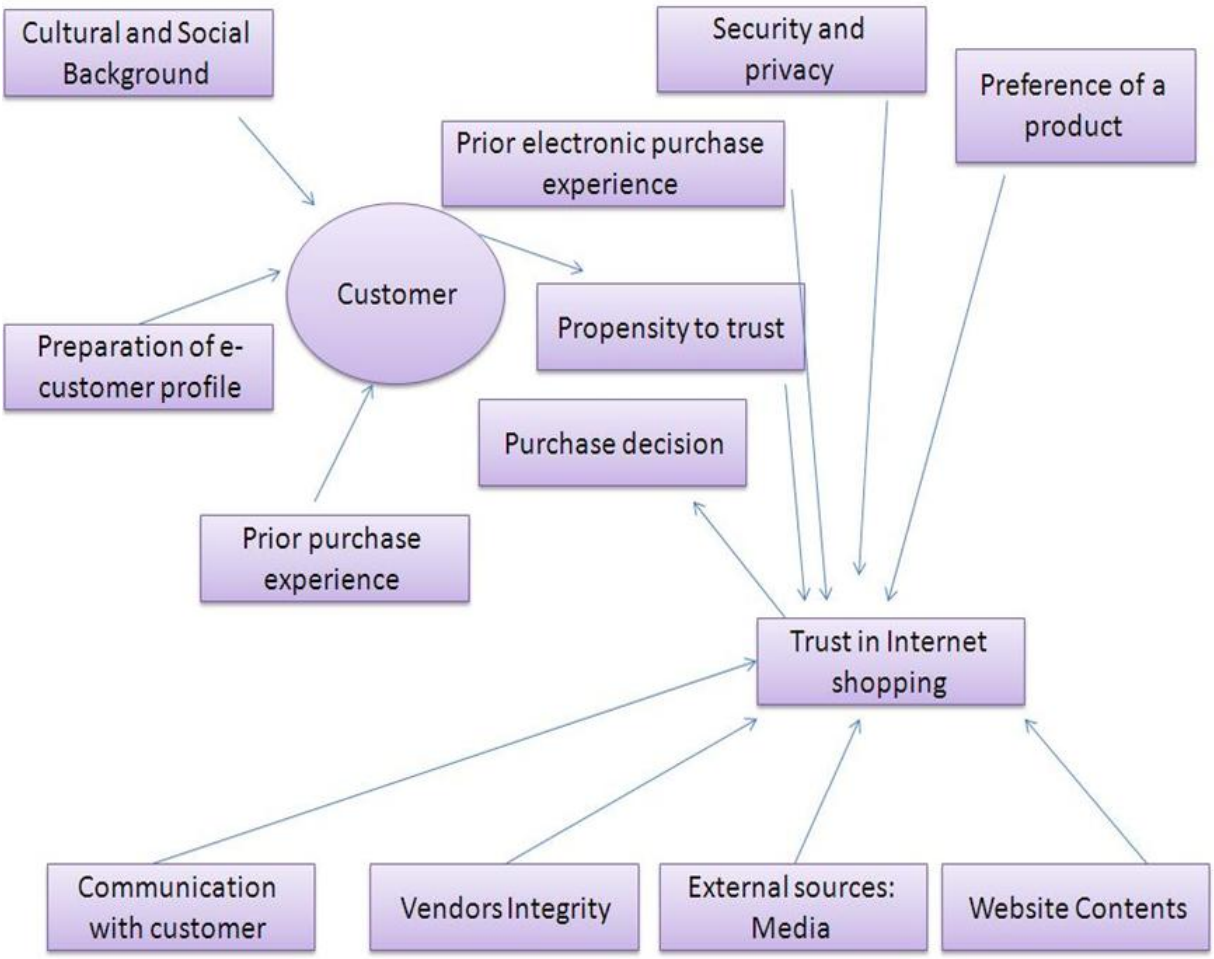

Figure 2.6: Customer Orientation Model [12]

2.10 Trust factors for online bank

Online bank trust factors have been studied by many authors. It has been suggested that there are six antecedents of trust: trusting beliefs, familiarity, disposition to trust, institution-based trust, reputation and perceived site quality in addition to the general web experience All of these factors enhance the trusting intention for

the customer (Figure 2.7)[88].

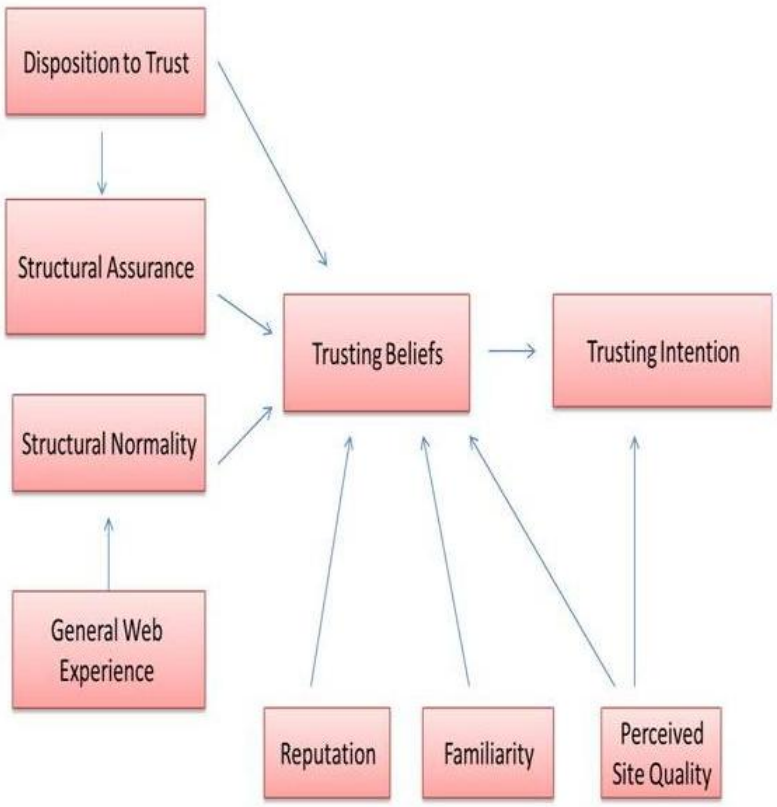

Figure 2.7: Trust Factors for Online Bank [88]

2.10.1 Trusting beliefs

Trusting beliefs are related to the customer's belief that the online bank vendor has beneficial attributes which include benevolence, competence and integrity [99]. Benevolence means "one can rely on the good will of the other to act in one's best interest" [57]while, "competence is the belief that a partner has the required skills to do a task" [23]. Competence also refers to the ability of the vendor to meet customer needs [98]. Integrity refers to the vendor's honesty. In general, a web user needs the online vendor to act in his interests and to be honest and to keep his promise for service delivery [71, 128].

2.10.2 Disposition to trust

Disposition to trust is defined as the general propensity to trust others in both an e-commerce and management context[73, 92, 98]. This feature depends on a person's, cultural and developmental experience [79]. For example, a person who tends to trust others will trust an online bank more easily. It has been suggested that an individual's propensity trust positively relates to the trustworthiness of the Internet [79].

2.10.3 Institutional-based trust

Institution based trust refers to a person's perceptions of the institutional environment. Institutional-based trust will lead to higher levels of trust in e-vendors in an online shopping context [21].

A structural assurance

Structural assurance is information that can be used to give a web service provider the confidence that security measures that exist are secure and can reduce the risk when something goes wrong" [23].

B Situational normality

Situational normality means that a person believes that the situation in a business is normal or favourable to their situational success [99, 108]. It also gives the idea that the parties involved will act normally and everything will occur in the right order [78]. For instance, when Internet users believe that the internet situation is normal and their roles are appropriate, then they have a basis for trusting the e-business. It was found that individuals tend to trust more when the nature of the interaction is in accordance with what they consider to be normal, anticipated and typical behaviour [48, 98].

2.10.4 Reputation

It has been shown that reputation is a crucial factor affecting trust in online shopping [21]. This is defined as a symbolic representation of a past exchange history. "Process-based trust is developed through repeated interactions between two partners and thus depends on the behaviour of each partner and the history of interactions among the partners" [83]. It was shown that reputation is an important factor affecting trust in e-commerce [110]. It has been suggested that a good reputation would positively affect trusting beliefs because reputation is a kind of 'second-hand rumour' [99]. In an online banking context, it refers to the accumulated scale of opinions from many people about the e-bank [84].

2.10.5 Familiarity

Familiarity refers to the previous interactions one has had with online banking vendors [108]. Familiarity is the antecedent of knowledge-based trust [48]. It was suggested that knowledge-based trust depends on history, information and experience [148]. Familiarity lessens confusion about website procedures and reduces the possibility that the customer may mistakenly sense that he/she is being taken advantage of unfairly [47, 48]. Trust is developed over time with the accumulation of trust-relevant knowledge resulting from experience with the other party [48]. Previous studies found that customers gain knowledge about e-vendors through their previous experience including past purchases, communication or other interactions with e-vendors [47].

2.10.6 Perceived site quality

Perceived site quality means the impression of how well the website is built and works. It has been shown that the affect of site quality perceived as good is a key factor in the relationship to willingness to explore and trust the site [99]. It has been found that with a high level of perceived site quality, the customer is willing initially to explore the site without considering risks and then, is more likely to have trusting intentions in a site which involves risk [70, 100, 143].

2.10.7 General web experience

General web experience is the accumulated experience of using the internet and browsing web pages. It is expected that this will be positively related to situational normality because internet experience gives the customer a of sense what are proper and normal situations, i.e. situational normality. In addition, internet experience will give the customer a feeling that the web is normal, safe and secure [98]. Many past studies suggested that prior experience of technology impacted on attitudes towards related systems [32, 86].

2.10.8 Trusting intention

Trusting intention means the intention to engage in trust-related behaviours with online banking vendors. It refers to the intention to continue to use the online banking services of this vendor in the current research context. Trusting intentions refer to the user being willing to depend on the e-vendors [98]. Trusting beliefs will positively relate to trusting intentions because a user with high trusting beliefs perceives the online banking vendor to have qualities that enable the customer to depend on the online banking vendors. Perceptions of honesty, ability and integrity in an e-vendor encourage the user to engage with them. There is significant evidence to suggest a strong relationship between trust and continuity (trusting intention) [109, 143].

2.11 Internet banking security model for e-banking

A recent study for online banking in Thailand [66] suggested hypotheses to accept online banking services by customers (Figure 2.8). These hypotheses include:

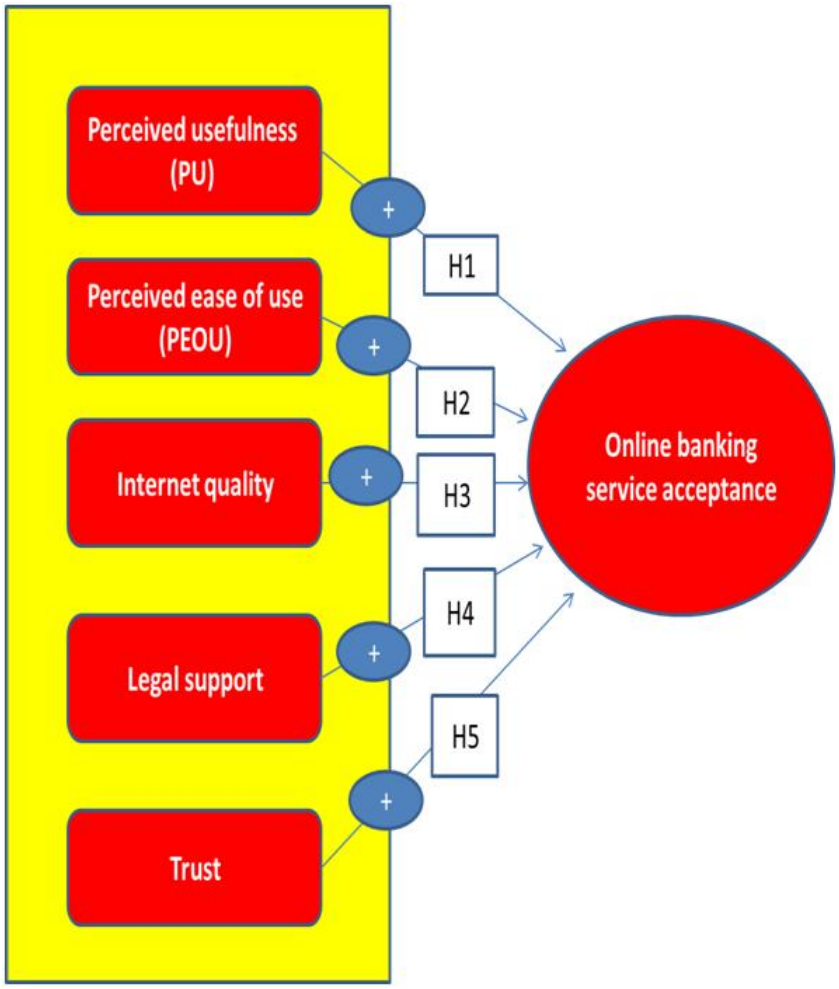

Figure 2.8: Internet banking security guideline model for banking [91].

These Hypothesis are summaries as follow in the table

Hypothesis	Study	Description
H1	[66]	Perceived usefulness has positive impact on online banking service acceptance.
H2	[66]	Perceived ease of use has positive impact on online banking service acceptance.
H3	[66]	Internet quality has positive impact on online banking service acceptance.
H4	[66]	Legal support has positive impact on online banking service acceptance.
H5	[66]	Trust has positive impact on online banking service acceptance.

Table 2.1: Internet banking security model for e-banking

The study [66] concluded that internet banking transactions are influenced by perceived ease of use (PEOU), perceived usefulness (PU), quality of the internet connection, confidence of the system provided through trast and legal support. It was found that high speed internet, authentication by using by device, single password usage and limiting the amount of money per transaction improved the willingness of customers to accept online banking services [66].

In addition to the past study one of the most popular models among IT researchers is the Technology Acceptance Model (TAM) [28, 29]. This model is an information systems hypothesis that models the user's acceptance and use of technology, it was adapted from the Theory of Reasoned Action "TRA" [44]. The main aim for the TAM model is to anticipate the user's acceptance of the information system to the user and identify design problems before users have experience with the new information system. It is suggested that there are two factors: the perceived usefulness (PU) and perceived ease of use (PEOU).

The PU is the degree to which person believes that using a particular system would enhance his or her job performance whil, PEOU is defined as the degree to which a person believes that using a particular system is free from efforts [28].

2.12 Online banking and extended theory of planned behaviour (ETBP)

A recent study [123] suggested an online banking model based on the theory of planned behaviour (TPB). This model is an extended theory of planned behaviour (ETPB) (Figure 2.9). The TPB was established in 1985 [1] and it was an extension of the theory of reasoned action (TRA) which was explained earlier. The theory explains how individuals form intentions and perform behaviours [1].

The theory of planned behaviour (TPB) suggested that behavioural intention is a function of attitude and subjective norm. This model (TPB) was extended and the following four categories were added: information quality, transaction speed, user-friendliness, and security, to give the extended theory of planned behaviour (ETPB).

The ETPB (Figure 2.9) suggests the following hypothesis:

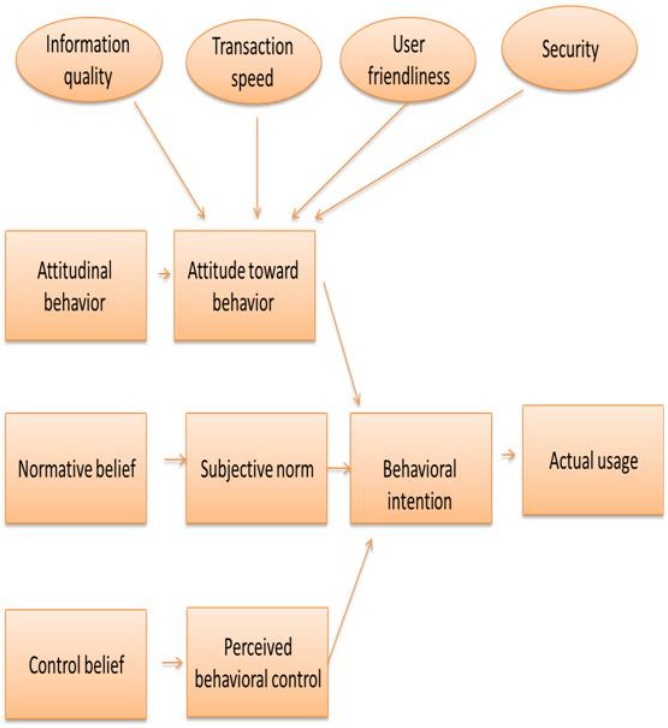

Figure 2.9: Extended theory of planned behaviour (ETPB) [1].

These Hypothesis are summaries as follow in the table (2:2)

Hypothesis	Study	Description
H1	[1]	Information quality positively affects consumer attitudes towards Internet banking. innovation.
H2	[1]	Transaction speed positively affects consumer attitudes towards internet banking
H3	[1]	User-friendliness positively affects consumer attitudes toward internet banking
H4	[1]	Security positively affects consumer attitudes toward internet banking
H5	[1]	Attitudinal belief has a significant impact on the attitude
H6	[1]	Normative belief has a significant impact on the Subjective norm
H7	[1]	Control belief has a significant impact on the perceived behavioural control
H8	[1]	Attitude has a significant impact on the behavioural intention
H9	[1]	Subjective norm has a significant impact on the behavioural intention
H10	[1]	Perceived behavioural control has a significant impact on the behavioral intention
H11	[90]	behavioural intention has a significant impact on the Actual usage

Table 2.2: Extended theory of planned behaviuor

2.13 Innovation diffusion theory (IDT)

Innovation diffusion theory was established on 1983 and it was the first theory that explained individuals' intention to adopt a technology as a modality to perform a traditional activity (Figure 2.10) [118].

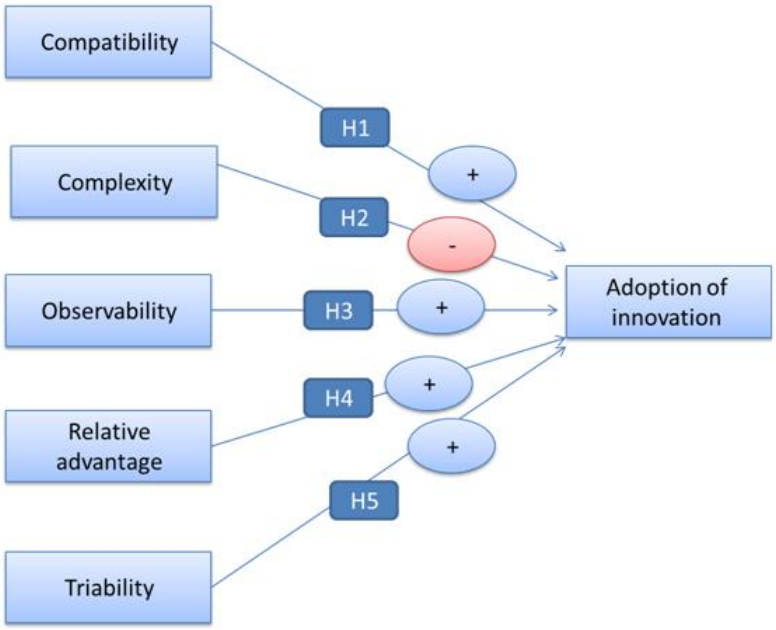

Figure 2.10: Innovation diffusion theory (IDT)[118].

The critical factors that determine the adoption of an innovation at the general level are relative advantage, compatibility, complexity, trial ability and observeability [118]. This model (Figure 2.10) suggested the following hypothesis:

Hypothesis	Study	Description
H1	[118]	Compatibility positively affects customer adoption of innovation.
H2	[118]	Complexity has a negative effect on adoption of innovation
H3	[118]	Trial ability positively affect customer adoption of innovation
H4	[118]	Relative advantage positively affect customer adoption of innovation
H5	[118]	Observability positively affect customer adoption of innovation

Table 2.3: Innovation difusion theory

2.14 The decomposed theory of planned behaviour

The Decomposed Theory of Planned Behaviour (DTPB) was developed in 1995 [132]. This theory consists of three factors influencing behavioural intentions attitude, subjective norms and perceived behavioural control (Figure 2.11). This theory suggested that the intention to use technology is influenced by attitude, subjective norms and perceived behavuioral control (Figure 2.11). Attitude refers to the personal behaviour one adopts towards innovation intention and adoption of technology. Attitude includes perceived ease of use (PEOU), perceived usefulness (PU) and compatibility. Subjective norms are the social pressures(e.g family and media) that may play an important role in an individual's intention to perform an activity [123]. Perceived behavioural control consists of self-efficacy (an individual self-confidence to perform a behavuior)and facilitating conditions.

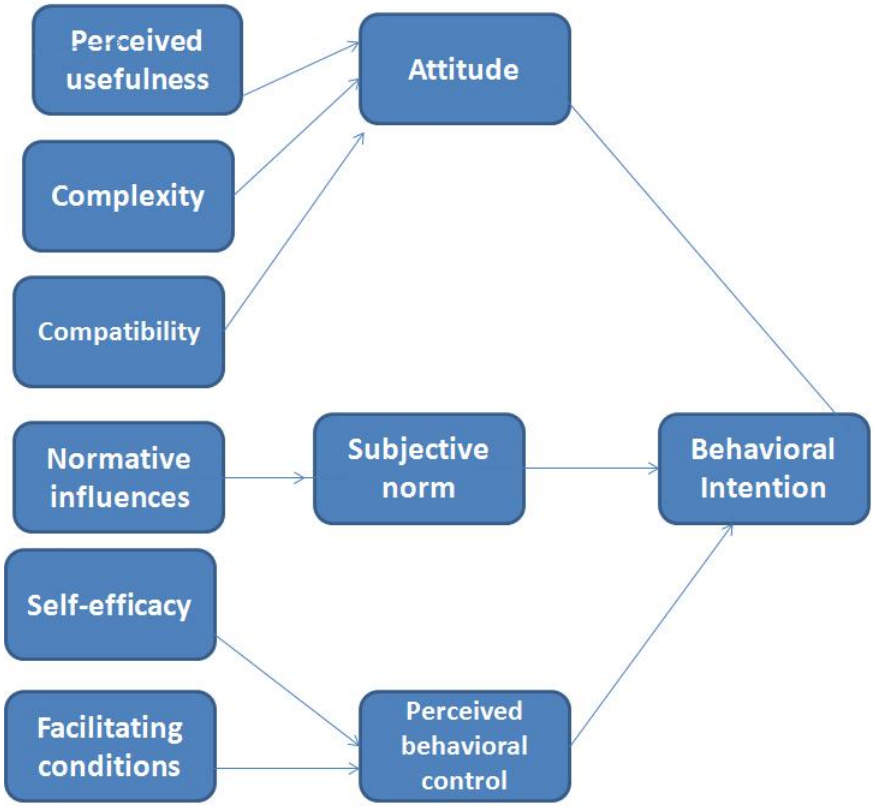

Figure 2.11: Decomposed Theory of Planned Behaviour(DTPB) [132].

Summary

Summary The chapter investigated the co-evolution process between business and information technology and why this co-evolution may fail. Failure of such co-evolution is due to formation of agap between the two entities: the user and the online banking system. This might be due to several factors include miscommunication between business and IT management in addition to the legacy system. This gap can be bridged for successful a co-evolution process by several methods. The different types of co-evolution were investigated (mutation rate and the environment, predator, supernormal, inbreeding and symbiotic co-evolution). Any successful co-evolutionary plan must include a system evaluation, a business strategy, a clear idea about the required implemented system, continuous revision of the system process and comparing the difference between the old and new systems. Online trust was defined in addition to different trust factors include trusting beliefs, disposition to trust, institutional-based trust, reputation, familiarity, perceived site quality, web experience and trusting intention. Different online banking models were eamined such as the online banking security model, the theory of planned behaviour (TPB), extended theory of planned behavior (ETPB), innovation diffusion theory (IDT), decomposed theory of planned behaviuor (DTPB). This gives us ane idea of how to establish this research framework depending on the relevant theoretical concepts. The adoption of online banking is studied in this thesis as a co-evolution problem. But to begin with, the research study explore various dimensions that affect the usability of online banking such as trust and security.

Chapter 3

Research Methodology

Objectives

- Choice of methodology
- Research philosophy
- Co-evolution approach
- Case study approach

The research methodology provides strategies to address the research questions. This chapter describes both the research methodology and the research philosophy. The study is grounded in theory and it needs an experimental study to support or refuse the proposed research hypotheses.

3.1 Choice of Methodology

The aim of the study The aim of this research framework are to improve the co-evolution between online banking and information technology and to reduce the gap between both entities. Online bank adoption studies in this research are a co-evolution problem. This co-evolution problem is represented by a gap formation between online banking adoption and the user's. This problem can be sorted out by reducing the gap between the customers and their adoption of online banking. Keeping in mind this aim, the focus of this thesis will remain on different factors

that enhance user's adoption of online banking. The need is to focus on the different factors that enhance online banking adoption and define those that are most important. Therefore, different online banking hypotheses and models were studied to select the most important factors in user's choosing to adopt the technology.

3.2 Research Philosophy

Conducting scientific research is sometime complex but, when the different stages of research are clear the research become less difficult and more clear. Usually research starts with a question which includes many ideas and covers a wide area of investigation. It is similar to starting from the big footprint of a pyramid and reaching to the narrow top. This indicates that research starts with major different and complex ideas which are then reduced to more focused ideas that form the research question. Therefore, the research question can be studied properly and selective hypotheses derived from it. The structure of the research can be seen as

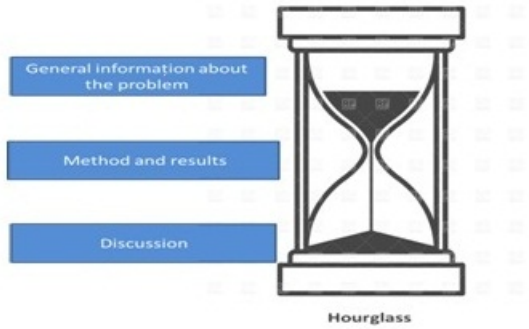

Figure 3.1: Hourglass [134]

The hour glass will consist of three different parts:

1. The upper part of the hourglass contains: General information about the problem (i.e. how to bridge the gap between customers and online banking adoption). This is done by identifying the problem area, reviewing the related research literature, identifying the gap and indicating how the research fills this gap.

2. The middle or central part of the hourglass contains methods used to fill this gap and interpret the results.

3. The lower part of hourglass contains the discussion which includes describing how the results answer the research question(by accepting or refuting the hypotheses), suggestions for describing the precise area of knowledge by comparing previous studies with the research findings, the implications and or significance of the existing research and final recommendations for future research.[112].

According to (Proctor) there are mainly two logical methods for conducting research: inductive and deductive reasoning.

3.2.1 Inductive reasoning

In the inductive method research data are collected and analysed without testing the research hypotheses [13]. This method usually starts from specific to general theory or "bottom-up" technique (Figure 3:2). It includes four steps: observation recognition of patterns, formulating hypotheses and building theory.

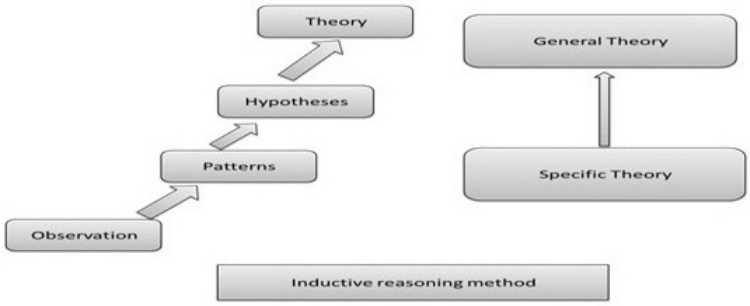

Figure 3.2: Inductive

3.2.2 Deductive reasoning

The deductive reasoning starts in the opposite way to the inductive method. It begins with an hypothesised answer to a question or problem "bottom-up" (it also includes four stages: observation, pattern, hypotheses, and theory). This deductive method concealed by accept or reject thehypothesis (Figure 3:3). It is reasoning from a general case or general theory that is well known to be true to being able to explain a specific instance. [33][116]

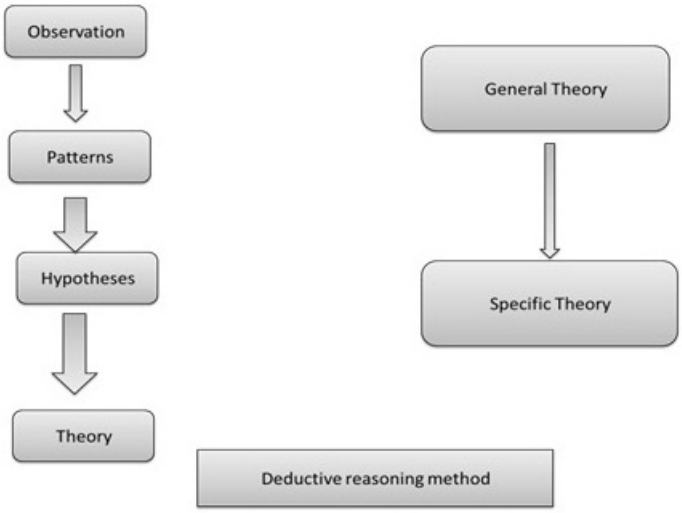

Figure 3.3: Deductive

It is very important before conducting any research to understand the research philosophy whether positivism post-positivism or something els [112]. Both philosophies will be explained in details in the following paragraph.

3.2.3 Positivism

This is a scientific philosophy based on the premise that all information resulting from logical and mathematical behaviours is the limited source of all powerful information. According to Oxford dictionary positivism is defined as" a philosophical system recognizing only that which can be scientifically verified or which is capable of logical or mathematical proof, and therefore rejecting metaphysics and theism" [31]. critics of postivist research suggest that human behaviours are difficult to study by using the approach taken by Positivism because a human is not an object and his action depends on variable and various factors. In addition there are individual variations between humans. . This indicates that the response of a different individuals in a situation may be variable and, in addition, the responses of the same individual to the same situation may be different. Some studies suggest that when

an individual loses his job and becomes depressed this will not indicate that if he undergoes the same situation another time he will become depressed [107].

This approach is highly important to study the coevolution in online banking because it indicates that observation and different online banking adoption factors are important to enhance the coevolutuion process between customers and online banking.

3.2.4 Post-positivism

Postpostivism appeared after the 2nd World War period due to dissatisfaction with the philosophy of positivism [14] & [24].

Postpositivism has rejected the main ideas of positivism. It concludes that researchers and individuals are similar in thinking that rational or logical' thinking and common sense are the same. In post-positivism, reality is an indication for individuals who are involved in the research and this reality can be influenced by different factors such as culture and gender [112]. Post postivism as a philosophy provide for a range of methods and researchers could use multiple methods including qualitative approaches.

A critical realism is a common is a form of postpostivism which indicates that reality is a form of independent thinking.The Critical realism can be contrasted with positivisms nave realism [82] & [34] & [15]. It has been noted that postpostivism depends on multiple methods to capture as much of reality as possible. Arelevant Postpostivism concept is that it is possible to acquire knowledge about phenomenon not directly observable by the senses.

3.3 Co-evolution approach

Co-evolution terminology indicates that the evolution of one entity will be influenced by the evolution of another entity. This means that any positivechanges in one entity will lead to changes in the other entity [95].

Co-evolutionary approach was used by many scientists and researchers in different scientific fields [11]. The co-evolution process will affect both the system itself and its

users. There are two types of co-evolution endogenous and exogenous.Endogenous co-evolution applies to individuals and groups within the firm or business while exogenous co-evolution occur between business and its environment [76].

Business strategies must be designed in parallel to information technology planning and their alignment must be according the business targets. As mentioned earlier in chapter two big business and IT projects can fail because of the gap formation between business targets and IT systems implemented. Therefore the Business strategy must be flexible to reduce gap formation between business and IT. Both business and technology strategies must co-evolve together to reduce the risks for a co-evolution process due to any sudden changes in the business context.

In an effective co-evolution process business or bank strategies must be aligned in a proper way with IT. However, co-evolution sometime produces non-linear actions which may have a positive impact on business but in some cases will have a destructive effect on business [94]. In this study the adoption of online banking is studied as a co-evolution problem. This problem is represented as a gap between online banking customers and online banking adoption. To improve the co-evolution process this problem needs to be solved by focusing on important factors for online banking adoption. These factors can be used as a tool by software engineering to improve the service and build up a suitable system according to the customer's requirements. Online banking hypotheses were investigated in addition to the literature review to give an indication about the factors that enhance online banking adoption by customers. From these hypotheses the proposed research framework was established. These theories include innovation diffusion theory (IDT) [118], the theory of reasoned action (TRA) [44], technology acceptance model (TAM) [28] & [29], the theory of planned behaviour (TPB) [90], online banking information system (OBIS) acceptance model [20], and commitment-trust theory (CTT)[105]. From all previous studies the research framework was established by using the most important factors which enhance online banking adoption

3.4 Case study approach

Case study research gives the researcher the means to understand a complex problem and build on previous research. It has been used by many researchers especially in the social sciences. Social scientists use case study and other qualitative methods for

conducting research. The case study research method was defined as an experimental examination that investigates anexisting phenomenon within its environment [149] [41].

The case study is the best methodology to make a comprehensive and deep investigation. It helps researchers to understand the present and the reason for the phenomena in its context [43]. Case study procedures were established by many researchers [149] [125]. It was suggested that case study research does not involve sampling as such but, selectivity of a number of cases can be very helpful in a research study [43] [149]. [125]. There are many types of case study which can be single-case or multiple-case: these includes exploratorycases (considered as anintroduction to social research), explanatory cases (used for causal investigations), and descriptive cases which depend on a descriptive theory or framework before starting the research. Other case studies can be described as intrinsic, instrumental or collective. The intrinsic case study is very helpful to understand specific phenomena in its context (For example. in this study the co-evolution problem occurs between customers and online bank adoption) in a financial domain and can be studied as an example of an intrinsic case. Another case study is the instrumental case study where the study cases are used for deep investigation. The instrumental case study is used for refining a theory in a more specific manner. The collective case study uses different case studies to investigate a phenomena. [149] [124] [125].

In this thesis. data was collected using a multiple research method approach specifically,different method such as a questionnaire, interview and observations were used to collect data from different resources [16].

Distributing research questionnaires and conducting interviews with online banking customers directors was very helpful to explaining people's perspectives on issue directly. However, questionnaires and interviews may be limited with regard to giving a full understanding of the study when compared with observations. The case study approach gives some insight into the co-evolution method that was applied in this study.

From the established framework the questionnaire was designed. According to the research questions previously discussed seven hypotheses were derived. From these hypotheses the research framework was established. The research framework was conducted experimentally with different online banking customers to see if these hypotheses are supported or not. Testing the research framework hypotheses gives

two choices,: the first is to change the hypotheses, the second is to go back and change the research framework.

The questionnaire was divided into different sections, with each section studying one hypothesis (Appendix). The experimental study for this research framework was made through distributing questionnaires to participants from the Saudi Arabian community. The reason for that is, because Saudi Arabia is the country of the researcher's origin and there is limited published data about previous studies in this country. In addition to that, Saudi Arabia has become one of the strongest economies globally with large numbers of national and commercial banks. This study aims to provide these banks with tools to attract more customers and improve their profit by concentrating on the customer's needs.

The proposed research framework consists of seven hypotheses. These hypotheses are to do with: (H1) personal information, (H2) personal experience, (H3) disposition to trust, (H4) bank reputation, (H5) trusting belief, (H6) structural assurance and (H7) perceived site quality.The proposed research framework was established according to previous studies and different online banking hypotheses and models. It was concentrated on different models and hypotheses which studied the acceptance of technology by users.

One of the models used in this study was an Innovation Diffusion Theory (IDT). This model was the first model that investigated the individual's adoption of technology[118]. This model suggested that compatibility, trial ability, relative advantage and observability have a positive effect on customer adoption technology [118]. Another model which has been studied and used in this thesis is the Theory of Reasoned Action (TRA) [44]. This theory indicates that attitude and subjective norms are responsible for individual intention and behaviour and indicates that behavioural intention determines the acceptance by users of information technology.

Another model used in this research framework is Technology Acceptance Model (TAM) which was adapted from TRA model. Technology Acceptance Model is an information systems hypothesis that models the user acceptance to use technology [28] & [29]. This model suggested that perceived ease of use (PEOU) and perceived usefulness (PU) are the most important factors for individuals using an information system.

In addition to previous models. Theory of Planned Behaviour (TPB) was also

studied and used for this study. This theory (TPB) suggested that behavioural intention is a function of attitude and subjective normS [90]. The same theory was extended and became the Extended Theory of Planned Behaviour (ETPB). This theory (ETPB) suggested that information quality, transaction speed, user-friendliness, security, attitudinal belief, normative belief, attitude, subjective norm, perceived behavioural and behaviour intention have a positive impact on the use of the online service.

In addition to the previous models, the Online Banking Information System (OBIS) acceptance model was studied [20]. This model consists of system quality, information quality, trust, (PEOU), (PU) and awareness. This model suggested that system quality plays an important role for user's acceptance of online banking service [20].

The Commitment-Trust Theory (CTT) model was used in this study. This model investigates user trust and acceptance for online services [105]. This theory indicates that trust is central to successful relationship marketing.

Other studies and models that include the security issue were investigated. From these models the, E-trust model for online banking was selected which suggested that perceived security and perceived privacy are the main factors for customer's trust in online banking [153].

The internet banking security guideline model for e-banking concluded that online banking service acceptance by customers was dependent on (PU), (PEOU), internet quality, legal support and trust [66]. Trust factors for online banking were also investigated through different models. One model is the Customer Orientation Model (COM). It was suggested by the authors [66] that there are six important factors enhancing customer's trust for online service [66]. These factors include security and privacy, website contents, website reputation, website vendors, feedback link and product quality [66].

Another model which was used is online trust factors. This includes; trusting beliefs, familiarity, disposition to trust, institution-based trust, reputation and perceived site quality [58].

3.5 Summary

This chapter explained the basic choices for research method selection as well as two models of research philosophy namely, the inductive and deductive reasoning methods. In this study the method of choice was deductive reasoning because as mentioned above it starts from general theories to specific theories (top-down). The literature reviewed in this study explained the general online banking hypotheses. From these hypotheses the proposed research framework was established (bottom-up technique). positivism and postpostivism were discussed. In this study postpostivist research philosophy was decided to be more related to this study because it studies the co-evolution problem (online banking adoption) in the real world through investing online banking customers. The co-evolution approach, as well as the case study method were covered. This chapter gives the researcher the opportunity to choose the ideal method to start the investigation depend on scientific basement.

Chapter 4

The design of the questionnaire

Objectives:

- Proposed research framework.
- Research questionnaire development and framework hypotheses.

4.1 The proposed research framework

The proposed research framework is intended to investigate the different factors that are important for customer's adoption of online banking. These factors were have been the topic many researchers around the world including the USA [72, 74], Europe [26, 111] Australasia [81]and Asia [19, 127, 151]. However, there is very limited published data about these factors in the Middle East and especially in Saudi Arabia. To date there are few studies about online banking adoption in Saudi Arabia. However, a previous PhD study did focus on challenges facing online banking adoption in Saudi Arabia [3].

This research framework is designed to study the different factors which influence customer adoption to use online banking in Saudi Arabia. The aim of the research

is eventually to improve the co-evolution between online banking and information technology. This will be done through enhancing the adoption of online banking. The proposed research will provide a bank with the required tools to enhance customer adoption of online services and will lead to a positive impact on the bank's business. This framework was adapted from previous studies and different theories including the theory of planned behaviour (TPB) [90], the decomposed theory of planned behaviour (DTPB) [132], the extended theory of planned behaviour (ETPB)[9], innovation diffusion theory (IDT) [118], the customer orientation model [12], the guidance model for online banking and internet banking security [91] and Maslow's hypothesis [90].

The research framework consists of the following hypotheses (Figure 4.1)

1. H1 : Personal information positively influences customer adoption of online banking.

2. H2: Personal experience positively influences customer adoption of online banking.

3. H3: Disposition to trust positively influences customer adoption for online banking.

4. H4: Reputation positively influences customer adoption of online banking.

5. H5 : Trust positively influences customer adoption of online banking.

6. H6 : Structural assurance positively influences customer adoption of online banking.

7. H7 : Perceived site quality positively influences customer adoption of online banking.

In line with these hypotheses this questionnaire was designed and divided into different sections with each section. studying one hypothesis (e.g. personal information (H1), personal experience (H2), disposition to trust (H3), and so on).

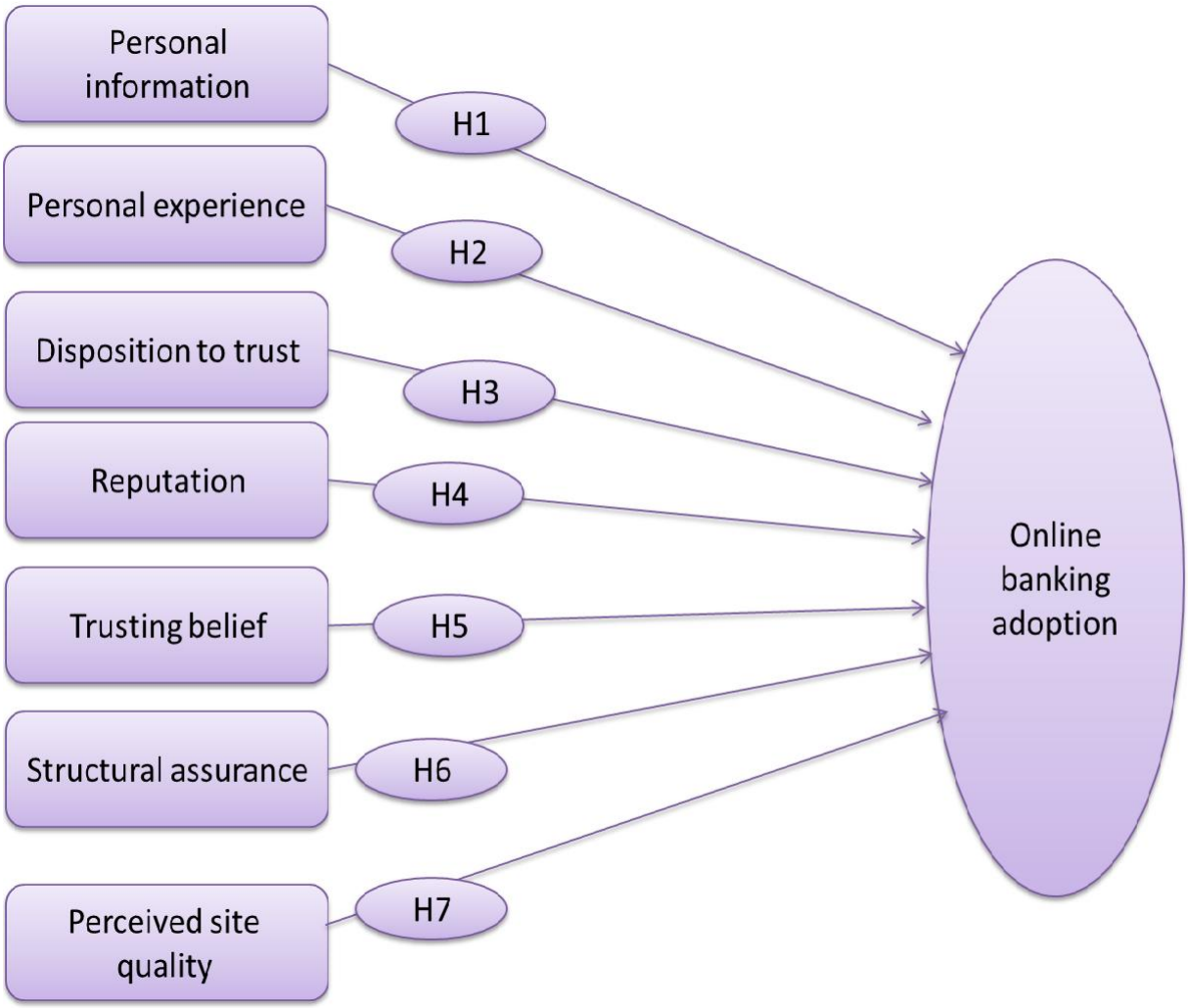

Figure 4.1: Proposed research framework

Each hypothesis and the reason for its selection will be discussesd in detail in the research framework.

4.1.1 (H1)Personal information

The first hypothesis in this research framework is personal information (H1). This will include gender, age and education.

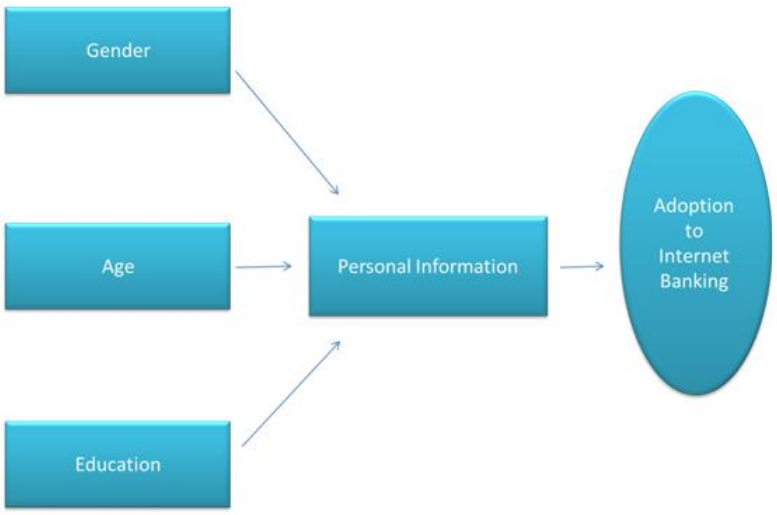

Figure 4.2: Personal information (H1)

4.1.2 (H2)Personal experience

Personal experience plays an important role in online bank adoption. Bank customers who have a negative experience of online services usually have a negative perception of online services. According to the classic theories on attitude the individual with a positive experience about an object will hold more positive beliefs about it [44]. This suggests that positive beliefs will lead to positive perceptions.

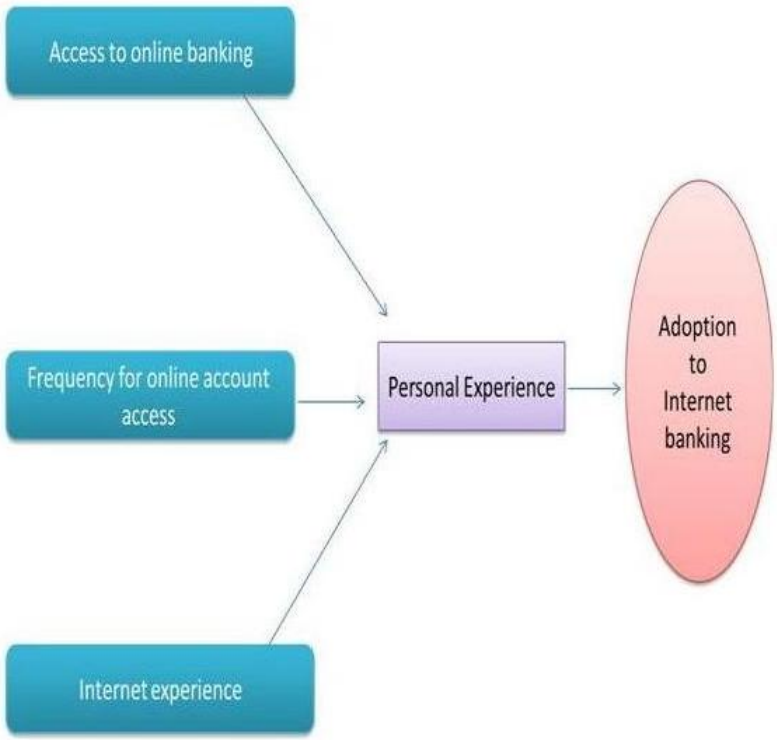

Figure 4.3: Personal experience (H2)

Personal experience can cross all the barriers between the customer and an online service. For these reasons this significant point (H2 hypothesis) was selected as the place from whih to develop the research framework for online banking adoption. This hypothesis on personal experience (H2) examines the customer's access to online bank account, the number of times the online bank account has been accessed and the number of years experience with online banking.

4.1.3 (H3) Disposition to trust

Personality psychologists usually have defined trust as an individual characteristic [119]. Trust was accordingly conceptualised as a belief, expectancy, or feeling that is deeply rooted in the personality and originates in the individual's early psychological development, it is also known as 'disposition to trust' [153]. In several studies the customer's disposition to trust was found to have an impact on the consumer's initial trust in an online vendor[47, 98].

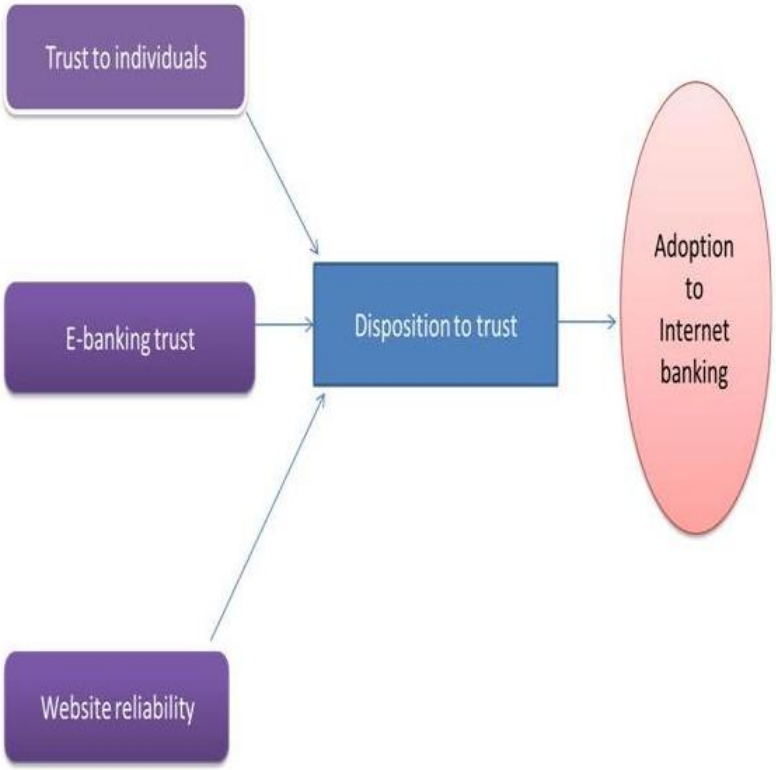

Figure 4.4: Disposition to trust (H3)

This hypothesis (disposition to trust (H3) was studied in the research questionnaire through investigating trust issues with online banking customers, the customer's trust in online banking in case of fraud and bank Website reliability

4.1.4 (H4) Reputation

Any business requires a good reputation to remain strong within its competitive context. Reputation is one of the important factors that affects online banking adoption. It was suggested that reputation is a significant factor to develop the customer's trust in online businesses [61]. Reputation can be influenced by shared values, communication and opportunistic behaviours [106].

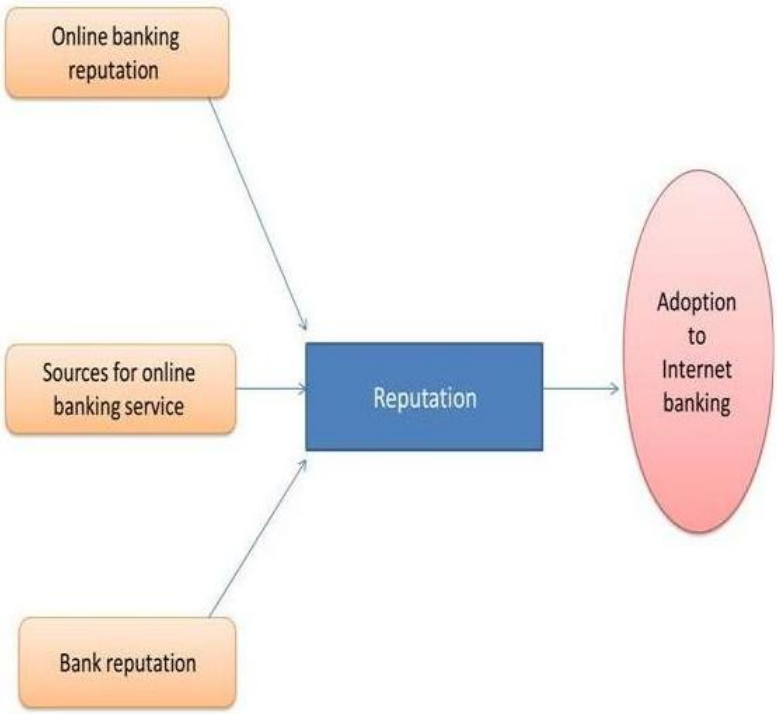

Figure 4.5: Reputation(H4)

The bank's reputation was studied in the questionnaire through asking about the following topics: the online banking service's reputation, online banking sources (friends, TV, bank staff and Newspapers) and, finally. the bank's good reputation.

4.1.5 (H5) Trusting belief

Holding a trusting belief was defined as, a psychological state which leads to the willingness of a customer to perform banking transactions on the Internet, and their expectation that the bank will fulfil its obligations, irrespective of a customer's ability to monitor or control the bank's actions [92, 120].

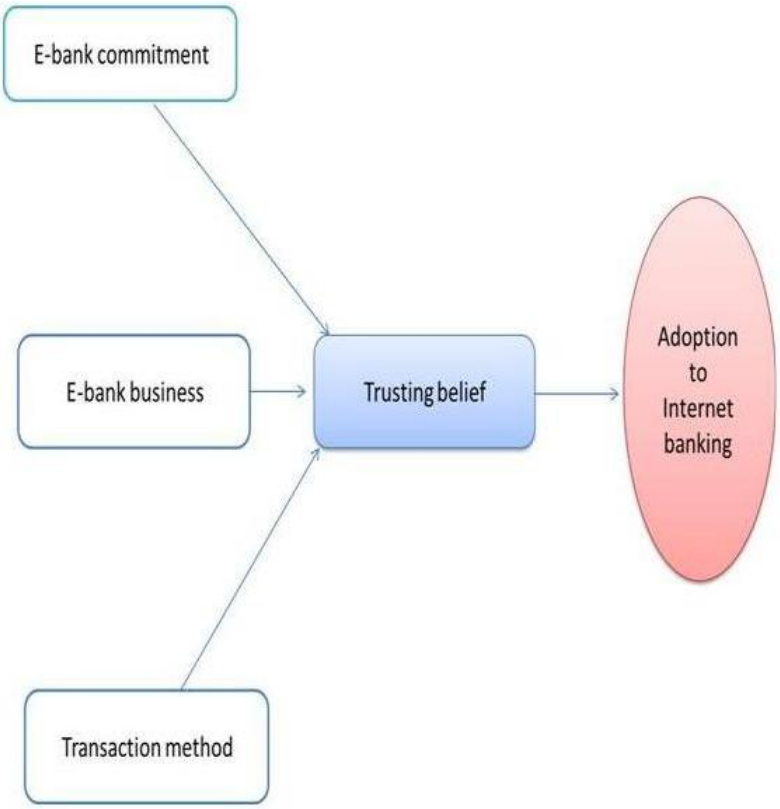

Figure 4.6: Trusting belief (H5)

In this study trusting belief (H5) was studied in the research questionnaire through investigating the customer's belief in online bank commitments, business performance through online banking and preferred transaction methods.

4.1.6 (H6) Structural assurance

Structural assurance is the belief that structures for provided services are protective, promises, and will lead to successful participation. in undertaking transactions

online. Structural assurance also refers to information that can be used to give a website user the confidence that present security measures can provide protection for user's information [23].

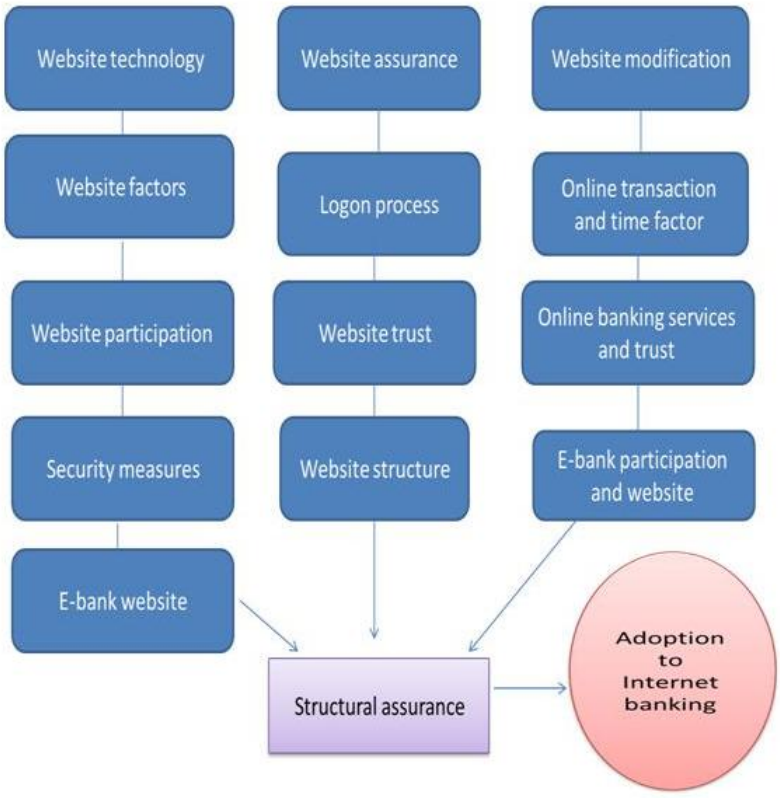

Figure 4.7: Structural assurance (H6)

Online customers who observe the presence of structural assurance will believe that integrated information technology will protect their personal data and prevent them from fraud. Recently online bank customers have been reqired to use their ID,and password in addition to an external device to log on to their bank account (e.g.

HSBC bank).

In this study structural assurance (H6) was studied in the research questionnaire through investigating the following issue: the technology's effects on website assurance, factors influencing customer's assurance (security, navigability, website contents and ease of use), the effect of website structure and Website text on customer participation, security measures and safety transactions. Multifunctional website features and their effects on customer's participation were also examined as was the information present on the website and its impact on customer's assurance, withe respect to the security of the logon process, website design and trust was a major topic in the questionnaire with respect to this hypothesis and questions examined over all structure and customer's assurance, factors influencing customer's trust (e.g. security and multifunctionality), website modification effects and online transaction and time factors.

4.1.7 (H7) Perceived site quality

The first impression for online customers about Website quality plays an important role in their eventual adoption of online services. Web site characteristics can be observed through wherther or not it is easy to navigate, is error free, has a professional design and an attractive appearance. These characteristics are very important to enhancing customer trust [6, 25, 122].

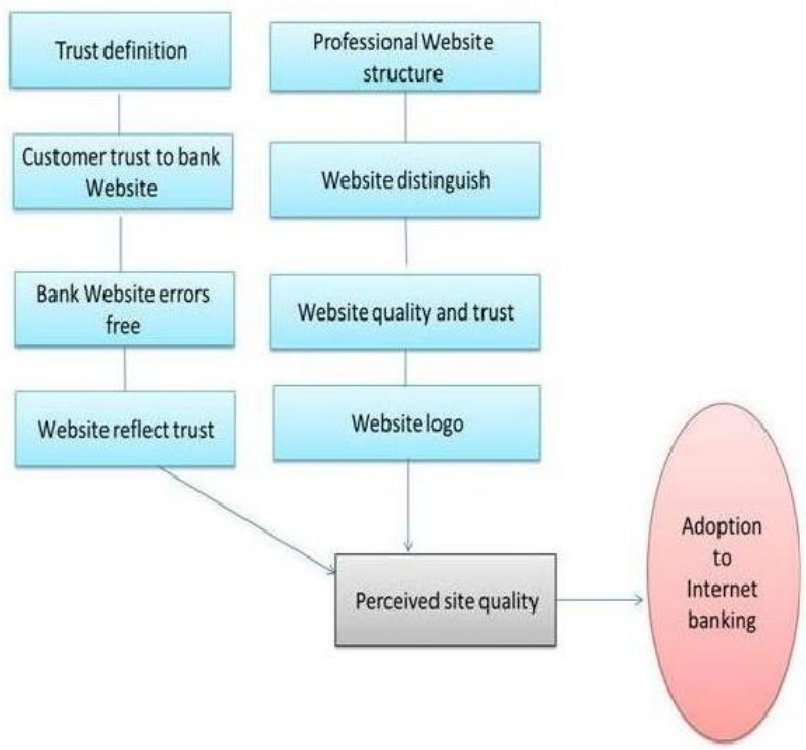

Figure 4.8: Perceived site quality (H7)

Previous studies found that perceived site quality is an important factor to attract and enhance customer's use of the service [98]. It was found that given a high level of perceived site quality, the user is willing to explore the site without considering the risks and is more likely to have trusting intentions towards the site although this may involve risks [70, 98, 143]. In the online banking context, site quality refers to tailoring a service to the customers' preferences [70].

In this study perceived site quality (H7) was studied in the research questionnaire

through questions investigating the meaning of trust to customers (i.e. security, navigability and privacy); the design of the bank's website and customer's trust; the website being perceived as error free; the website and trust reflex, the website's quality and user's trust; the bank's logo and its relation to website trust; the customer's ability to differentiate between reality and 'imitation' websites, and the relationship between website structure being perceived as proffisional and customer's trust.

4.2 Summary

The proposed research framework was developed by using different online bank models. These models contein the most important htpotheses that have been studied by many researchers in other, global contexts. These hyoptheses effects the customer's adoption for online banking. The hypotheses described investigated topics including: personal information, personal experience, disposition to trust, reputation, trusting belief, structural assurance and perceived site quality. Every hypotheses was represented as a section in the research questionnaire and questionnaire divided into sub-hypotheses to expand the initial topics. This study was applied to the Saudi community.

Chapter 5

Results and Discussion

Objectives:

- To study the factors that increase the customer's adoption for online banking.
- Analysis.
- Findings.

In this chapter a questionnaire was designed to which is informed by the previous studies and models discussed earlier in the literature review section. The questionnaire is attached in Appendix A. Samples from the respondents questionnaire are provided in Appendix B. The important factors which affect customer trust were covered. The statistical analysis was conducted by using SPSS version 18 and Bio-Cal statistical methods. statistical result in abbindex C. The descriptive analysis of the findings is given in Appendix D. The frequencies for all the questionnaires were undertaken and the results are given in Appendix E. Results and findings are provided in the following section.

Results and Discussion

Online bank questionnaires were distributed to 150 participants in order to investigate the different factors affecting customer's trust in online banking. A total of 100 participants responded and the data were collected and analysed using SPSS version 18 Software for statistical analysis in addition to BioCal for statistical analysis. Descriptive and correlation analyses were performed and the results for each section of the questionnaire are given below.

5.1 Personal information H1

5.1.1 Gender

From all the cases (100) only 77 cases have an online bank account. It was found that the number of males was 42 (54.5%) and females was 35 (45.5%) Figure 5.1 and (Table C.1 in Appindex C).

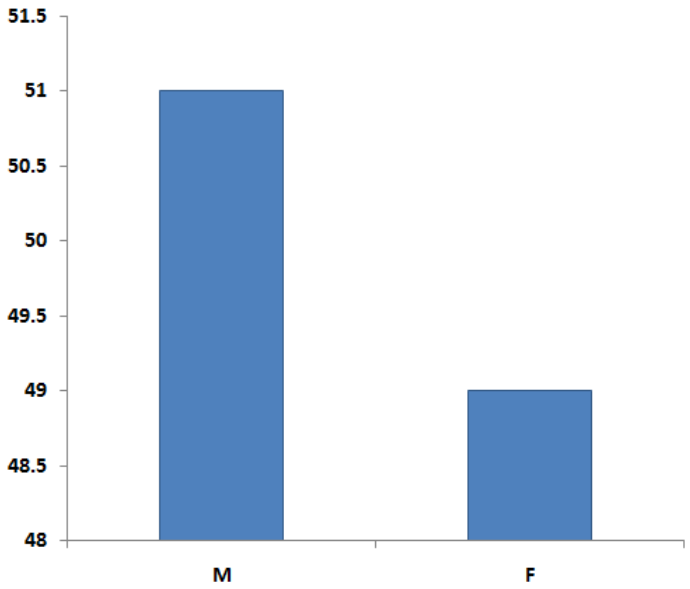

Figure 5.1: Gender distribution

Males represent the larger group in this study. However, the gender effect for online

banking customers has been studied by many authors. A study in Finland for online banking adoption found that 51.1% of cases were male whilst, females represented 48.9% of all cases[91]. The same study concluded that mature customers are late adopters of internet banking due to practical problems in using e-banking, concerns about the expensive start-up, security, and lack of personal service [91]. Another study found that males made up 31.2% whilst females represented 68.8% of all cases [64]. A recent study for online banking adoption in India found that a male representation was 60.3% whilst females represented 39.7% of all cases [121].

However, all previous studies showed a variation between male and female distribution which may give an idea that gender is a variable factor for online banking adoption. Due to limited data about the gender effect for adopting online banking in Saudi Arabia this factor was studied and added to the research questionnaire.

5.1.2 Age

Participants was divided into two groups,: the number of participants in the first group (20- 39 years) was 52, in the second (>40 years) was 25 Figure 5.2 and (Table C.2 in Appindex C).

Participants from the youngest age group (20-45 years) represented 84.4% of all cases whilst the older age group (>50 years) represented 15.6% which indicates that elderly people may sometimes struggle when using online services due to skill barriers or maybe because they prefer to visit the bank branch instead. Skill barriers in using online banking services were found in previous studies [4]& [147] .

A previous study on age effects on computer use in an Australian telecommunication company found that age had a negative correlation with computer use [155]. However, another next study found that individuals across a wide range of ages engage in browsing and purchasing activities over the Internet [133].

Investment services such as online banking were found to have a high demand among mature customers [65]. The age factor was studied in an Australian online banking context. It was found that the age ranged from 20-60 years, with the majority of cases <50 years and, the largest group's age range from 40-49 years [64]. This suggests that age is an important factor in providing personal information and this factor can give an indication about the age group that uses online banking services.

This observation was also made in previous studies on 1000 online bank customers [147]. The Saudi Arabia population is around 26,131,703 and the age group studied (67.6%) ranged from 15-64 years [59]. In this study the majority of online banking customers in the Saudi community were young individuals.

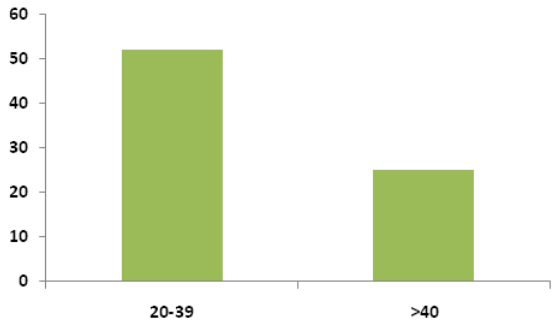

Figure 5.2: Age group distribution

5.1.3 Education

Education is an important factor for online banking adoption. There is a strong argument that education enhances proficiency in using network technology and thus would increase the probability of online banking adoption. In this study there was a strong effect of education on online banking customers (Figure 5.3) and (Table C.3 in Appindex C). The results showed that the number of post-graduates were 53 and undergraduate participants were 24. Results showed that 68.8% of participants was postgraduates which indicated that higher qualification individuals are more equipped to using online banking services. This finding indicates that education has a positive influence in online banking adoption.

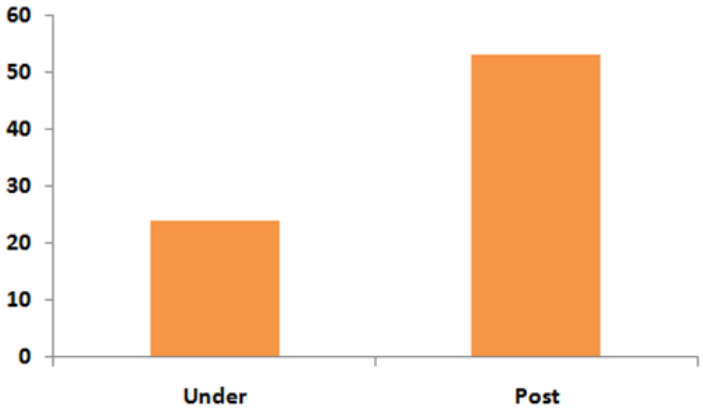

Figure 5.3: Effect of Education on online banking customers

This result is supported by previous studies. It was found that more educated individuals are more responsive to learning new technologies [7]. Another study [53] indicated that well educated individuals have better home productivity than less educated individuals because they can produce household goods with relatively smaller inputs and less time. This indicates that well educated (postgraduate) individuals respond more quickly than less educated (undergraduate) individuals to Internet banking. It was suggested that people with a higher education are more likely to adopt online banking than those with less education [22].

It was also hypothesized that well educated individuals adapted to Internet banking quicker due to their ability to accept the knowledge they acquired more quickly [7, 53]. Previous studies also found that wealthier and more educated individuals are more likely to use online banking services [91, 153].

Another study of online customer commitments and website quality found that a high percentage of customers (89.7%) were highly educated [52]. An Australian study for online banking adoption found that online banking customers were divided according by education into 43.8% with anundergraduate degree, 18.8% with postgraduate qualifications, 18.8% with non-university tertiary education and 18.8% with High school [81]. In Saudi Arabia 74.0% of the population achieve a secondary

level of education or higher [104]. This study finding indicates that well educated individuals are more adapted to online banking services.

5.1.4 Bank name

The questionnaire was distributed in Saudi Arabian society and participants represent customers from different banks (National and international). International bank customers were 37 whilst national bank customers were 40 individuals. The national bank were customer's of the Saudi American bank (27.3%), Al-Rajhee bank (12.9%) and Al-Riyadh bank (3.9%) respectively. However, the Saudi American bank, Al-Rajhee Bank and Al-Riyadh bank represent the most famous banks in Saudi Arabia. (Figure 5.4) and (Table C.4 in Appindex C)

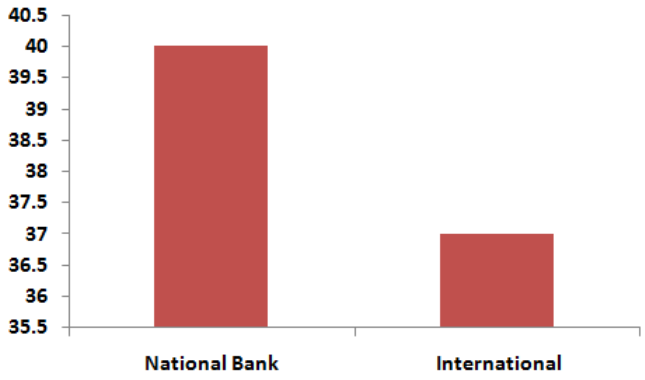

Figure 5.4: Customers distribution from different banks

5.1.5 Online bank account

From all cases of data collected (100) online banking customers represent 77 participants whilst 23 individuals had no online banking account(Figure 5.5) & (Table C.5 in Appindex C). Those individual with no online bank account are not included

in the remaining analysis of the questionnaire.

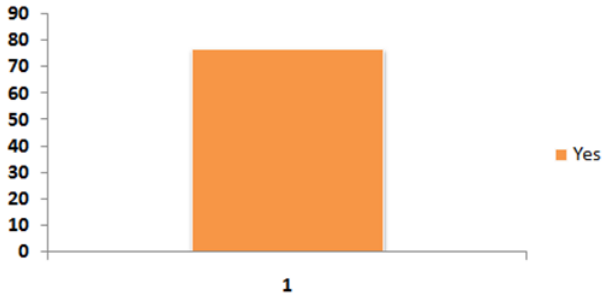

Figure 5.5: Online bank customers distribution in all cases

5.2 Personal Experiences H2

Personal experience (H2) was investigated in this study by online bank account access, time of access for an online bank account and number of years using internet services. Personal experience or personal familiarity with information technology usually leads to an appreciation of the potential added value of technologies. It was suggested that previous personal experience with technology was found to have a positive impact on a customer's belief about integrated information technology [32, 86]. Customers attitude towards technology is one of the important reasons for adopting internet services [45].

All previous studies showed the importance of personal experience in online banking adoption. They also showed how this experience can cross all the barriers between the customer and an online service. For these reasons this significant point (H2 hypothesis) was selected to develop this research framework for online banking adoption.

5.2.1 Access to online bank accounts

Online banking access was investigated. It was found that online bank access represents the practice of 76 participants whilst, 1 participant never actually accessed his bank account through the Internet. It was suggested that online customers who frequently use the Internet and are more experienced in website navigation have a high perception of self efficacy and are more likely to tend to words online services [49, 156] [152]. (Figure 5.6) and (Table C.6 in Appindex C) .

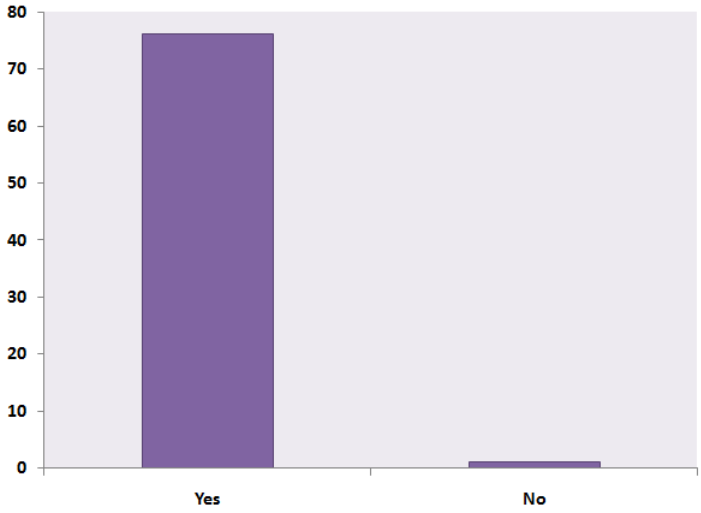

Figure 5.6: Number of online bank customers accessing their account

5.2.2 Time access for online bank accounts

The frequency for online banking access within a three months' time period was studied. It was found that 58 participants had accessed their account 1-19 times during a three month period and 19 participants accessed their account 20-30 times (Figure 5.7) and (Table B.7 in Appindex B). In general 97.4% of participants accessed their account more than once time in a three month interval. This indicates that continuous us of online services will build trust for the user which will correspondingly increase their adoption of the service. A previous study suggested that trust with online services may be built incrementally following experience online and trust can be built by starting with a small purchase and built up to bigger ones [54]. Online customers are gaining information more easily through the online experience. This increases their knowledge and modifies their initial perceptions [101, 142].

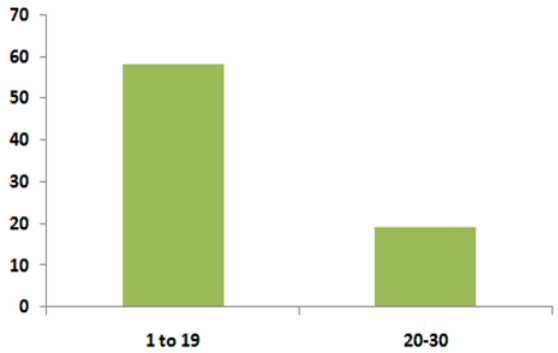

Figure 5.7: Frequency of use of online bank services by customers

5.2.3 Number of years using Internet

Another investigation about how many years customers were using Internet services found that 59 participants were using Internet services from 1-10 years, and 18 participants for >10 years (Figure 5.8) & (Table C.8 in Appindex C).
The high number of users of the service for a period of 10 years and the remaining participants for more than ten years may indicate that customer experience enhances the adoption for online services. This is in line with a previous study that suggested that more customer experience increases the understanding of technology and its outcome [5]. It was argued that the customer's adoption rate of the technology is proportional to their previous experience with information technology [138]. These findings showed that personal experience (H2) positively affects customer adoption of online banking.

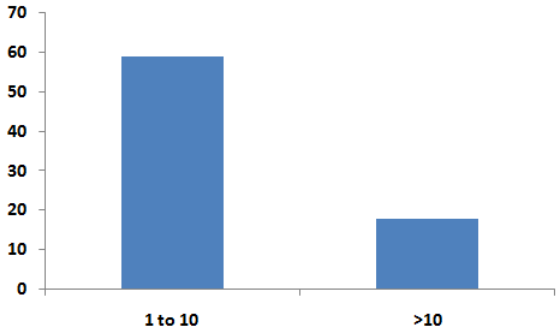

Figure 5.8: Internet experience for the customers by years

5.3 Disposition to trust H3

Disposition to trust was investigated through personal ability to trust, e-banking trust in case of fraud and website reliability. Customers' trust in an internet context is very important and a complex factor in understanding why people adopt online banking services. In general, online customers have some concern about the reliability of the underlying Internet and related infrastructure te[7]. In addition, online

customers are usually worried that the online vendor might provide their information to a third party or perform bank transactions without customer's permission[7]. In the 20Th century economists and sociologists have been focused on how to make institutions such as banks reduce the concern and uncertainty associated with transactions [8, 50, 157].

Customers' trust in online banking transactions has some differences compared with face to face transactions. These differences include the use of technology for transactions, the distant and impersonal nature of the online context and the hidden insecurity of using technology for transactions [153]. These differences increase customer awareness of online transactions, increasing their concern about adopting e-banking. These concerns represent challenges to bank administrations to find a method to improve electronic relationships with customers. Banks must understand the factors that may affect customer's intentions to participate in online banking. The following section will investigate personal ability to trust, e-banking trust in case of fraud and website reliability.

5.3.1 Personal ability to trust

Personal ability to trust showed that 48 participants rusted individuals and companies such as banks some what easily whil, 29 participants did not place their trust easily (Figure 5.9) and (Table C.9 in Appindex C).

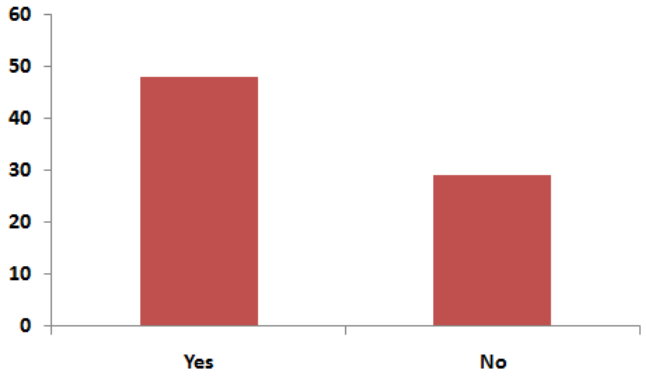

Figure 5.9: Trust ability

5.3.2 E-banking trust in case of fraud

Online banking fraud represents one of the strongest barriers for online banking customers. In this study bank customers' trust was examined in the case of fraud. It was found that 61 participants (79.2%) would still trust their bank even when a fraud has happened whil, 16 participants (20.8%) would not trust their bank in this case (Figure 5.10) and (Table C.10 in Appindex C).

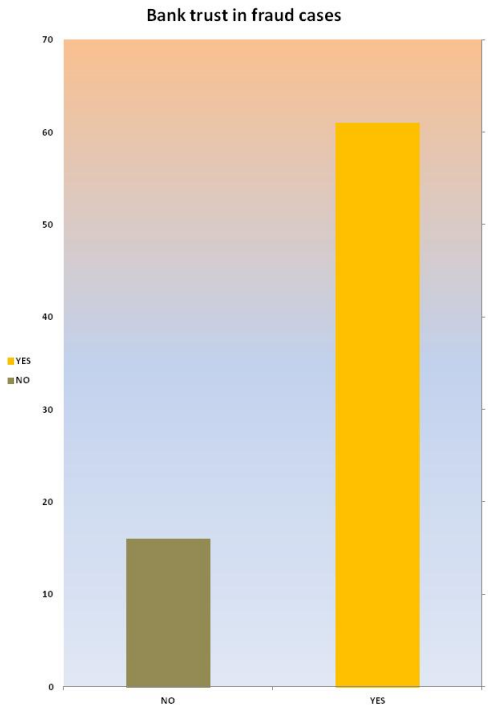

Figure 5.10: E-bank trust in case of fraud

5.3.3 Bank website reliability

Bank website reliability was found in 73 of the cases (94.8%) while in 4, participants didnt feel that their bank website was reliable (Figure 5.11) and (Table C.11 in Appindex C) .

The results indicate that disposition to trust has a positive effect on customer adoption of online banking. As mentioned earlier in Chapter 2, that disposition to trust

plays an important role in a customer's initial ability to trust and it depends on a person's cultural and developmental experience [79, 99]. A recent study on Omani bank customers concluded that e-banking in Oman is moving very slowly due to different factors including customer's trust [2].

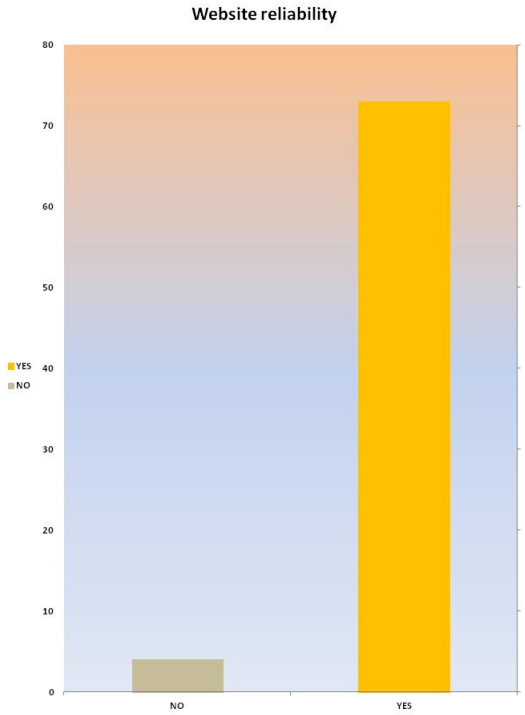

Figure 5.11: Bank website reliability

The results indicate that disposition to trust has a positive effect on customers adoption to online banking. As mentioned earlier in Chapter 4, that disposition to trust plays an important role on a customer's initial ability to trust and it depends on a person's cultural and developmental experience [79, 99]. A recent study on Omani bank customers concluded that e-banking in Oman is moving very slowly due to different factors including customer's trust [2].

5.4 Reputation H4

Bank reputation was investigated through: online bank services, sources for online bank service and bank's reputation belief. It was found that there is a negative correlation with a negative reputation and customer's trust [18]. This indicates

that positive reputation will have a positive correlation with customer's trust. The reputation of the banks was found to increase customer's confidence towards dealing with bank services and truthful information presented by the bank [141]. Online bank reputation was examined and the result is given in the following paragraph.

5.4.1 Online bank service

In 73 cases (94.8%) the online bank service was well known while 4 participants (5.2%) suggested that their online banking service is not well known (Figure 5.12) & (table(C.12 in Appindex C).

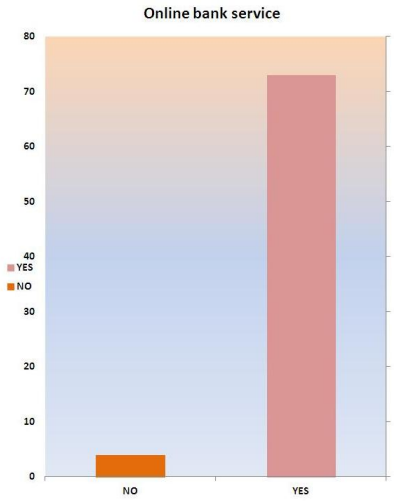

Figure 5.12: Online bank service

5.4.2 Bank services were known through

Results showed that online bank customers knew about e-bank services through bank staff (55 participants) while 22 participants knew about them from friends, TV and newspapers. This indicates that bank staff are very important enhancing the use of online services by customers (Figure 5.13) and (Table C.13 in Appindex C).

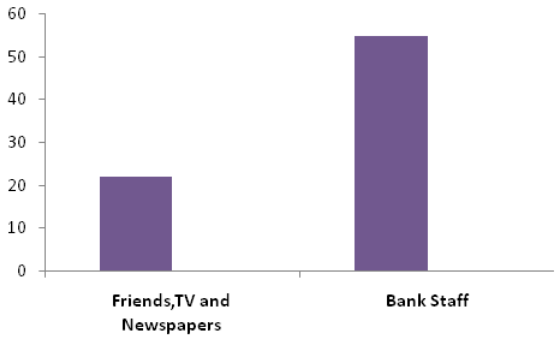

Figure 5.13: Sources of e-bank service

5.4.3 Bank reputation belief

In all cases 73 individuals suggested that their bank had a good reputation while 4 participants suggested they did not (Figure 5.14) and (Table C.14 in Appindex C).

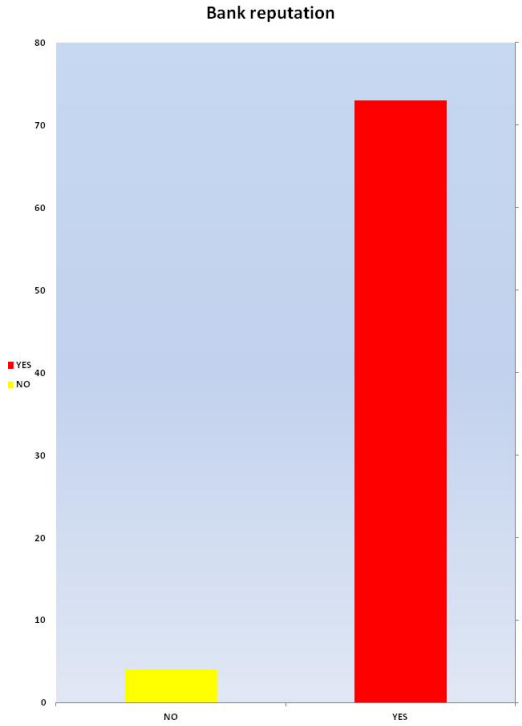

Figure 5.14: Bank reputation

Our findings in this study indicates that reputation is one of the important factors for online banking adoption by customers. This finding was observed in previous studies [40, 87]. A recent study on Malaysian banks found that reputations significantly influenced customer's loyalty [150]. It was argued that the reputation of online suppliers is significantly more important to online consumers than any offline context [126]. It was also found that customer loyalty was enhanced by the reputation of the organization, such as banks [39]. A recent study suggested that the best-known service companies with good reputations will have more profits and customer loyalty [115].

5.5 Trusting belief H5

Trusting belief (H5) was studied through investigating the customer's belief in online bank commitments, business performance by online banking and preferably. transaction methods. Results are given in the following section.

5.5.1 E-bank and its commitments

In all cases 73 participants believed that an e-bank keeps its commitments while 4 cases never felt that (Figure 5.15) & (Table C.15 in Appindex C). It was suggested that a person's trusting intentions can be influenced through a person's disposition to trust, an institution based trust and their trusting beliefs [98].

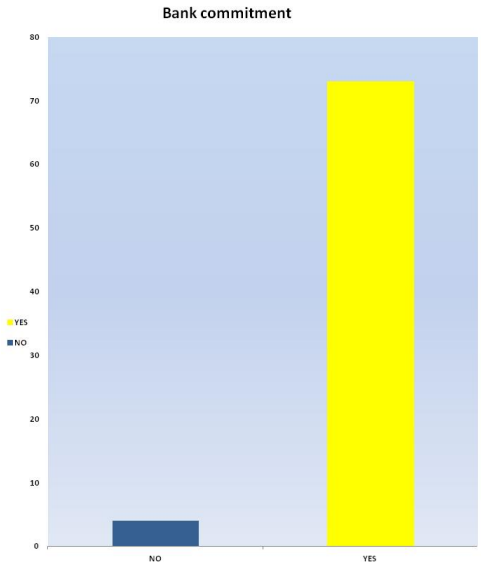

Figure 5.15: E-bank and its commitment

5.5.2 E-bank and business performance

In all cases 72 of the participants felt that e-banks performed business in a proper way while 5 participants felt that e-bank business was not acting proper (Figure 5.16) and (Table C.16 in Appindex C).

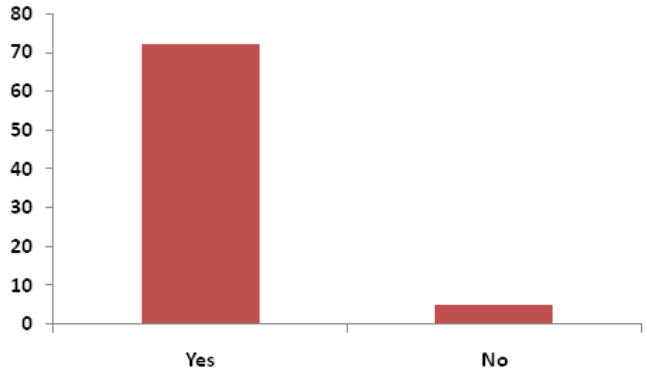

Figure 5.16: E-bank business performance

5.5.3 Transactions through the bank

It was found that 59 customers preferred to make transactions through online banking while 18 customers preferred to make their transactions in a bank branch (Figure 5.17)& (Table C:17 in Appindex C).

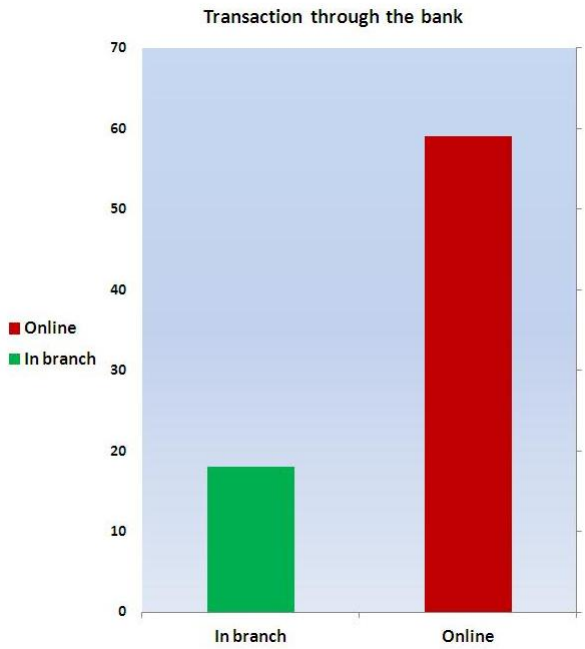

Figure 5.17: Transaction through the bank

All above results indicate that trusting beliefs (H5) have a positive effect on online banking adoption.

5.6 Structural assurance H6

Structural assurance also refers to information that can be used to give a website user the confidence that present security measures can provide protection for the user's information [62]. This is a very important factor for online banking adoption. Customers who trust others easily are more likely to believe that website protective structures are more trustworthy. A previous study showed that individual trust is influenced by website protective structures in addition to the contextual factors such as security infrastructure [79, 98]. It was also found that structural assurance has a positive effect on disposition to trust [78].

In this thesis, structural assurance was studied through investigating: technological effects on Web site assurance, factors influencing customer's assurance, the effect of website structure and website text on customer participation, security measures and safety transaction, the effect of needless text on a website and multifunctional websites on customer's participation, information present on website and customer's assurance, security of the logon process, website and trust reflect, website structure and customer's assurance, factors influencing customer's trust, website modifications effect on customer's trust and online transaction and time factors. Results are given in the following paragraph.

5.6.1 Technology assurance

The technology used for online service was found to improve customers assurance in 72 participants while 5 customers argued that technology did not enhance their feelings of assurance (figure 5:18) and (table C:18 in Appindex C).

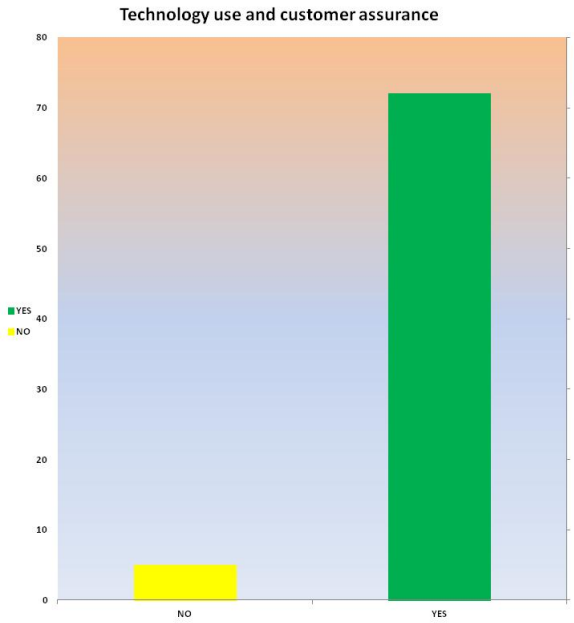

Figure 5.18: Technology and customer assurance

5.6.2 Important factors for customers when using website

Important factors for customers when using online services (security and contents and navigability) were examined. The results showed that security and contents were the most important factor (68 customers) while navigability was important for 9 customers (Figure 5.19)& (Table C.19 in Appindex C).

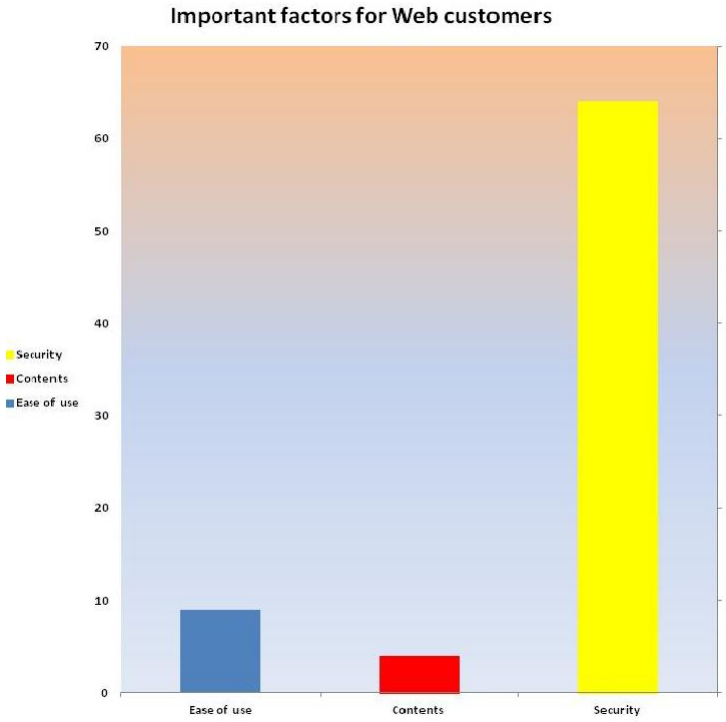

Figure 5.19: Important factors for web customers

5.6.3 Website participation

Online participation was found to depend on website structure in 65 cases and on the website text in 12 cases (Figure 5.20) and (Table C.20 in Appindex C).

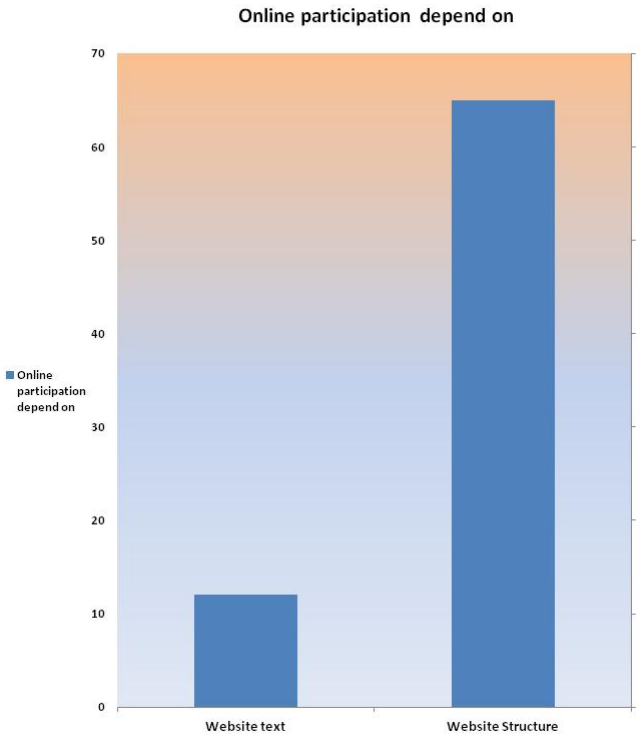

Figure 5.20: Online participation

5.6.4 Security measures and safety

Security measures (e.g. encryption, personal data protection) were found to provide a safe environment for customer transaction in most of the cases (Figure 5.21) and (Table C.21 in Appindex C).

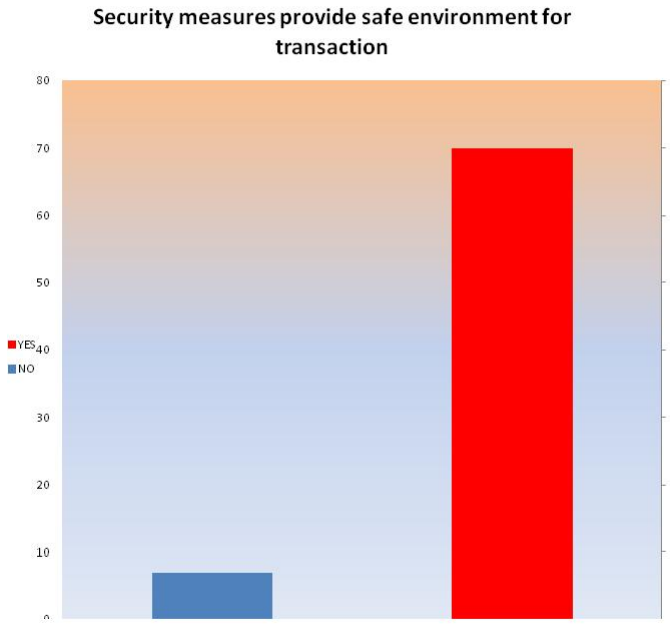

Figure 5.21: Security measures and safe transaction

5.6.5 E-bank participations and website structure

It was found that multifunctional website enhanced customer participations more than needles text website 55 and 22 participants respectively (Figure 5.22) and (Table C.22 in Appindex C)

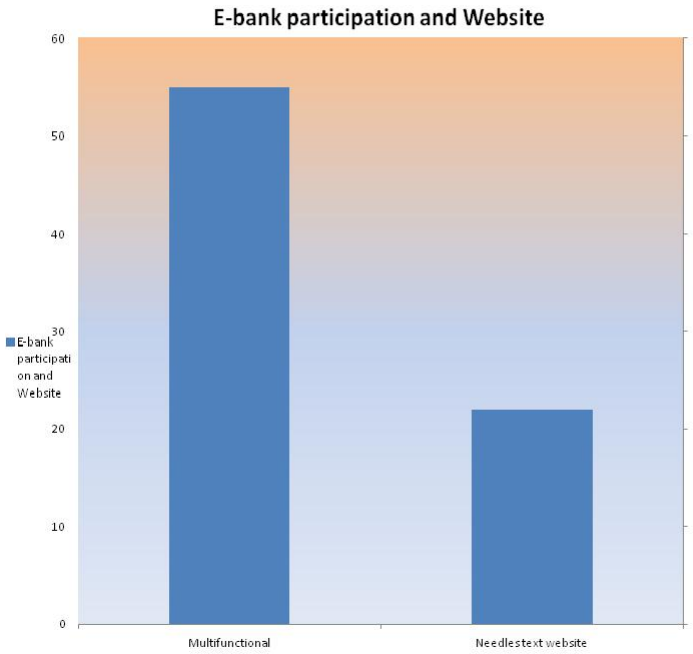

Figure 5.22: E-bank participation and website

5.6.6 Bank website information and reliability

Most customers felt that information present on the bank Website assured them Website is reliable (73) (Figure 5.23) and (Table C.23 in Appindex C).

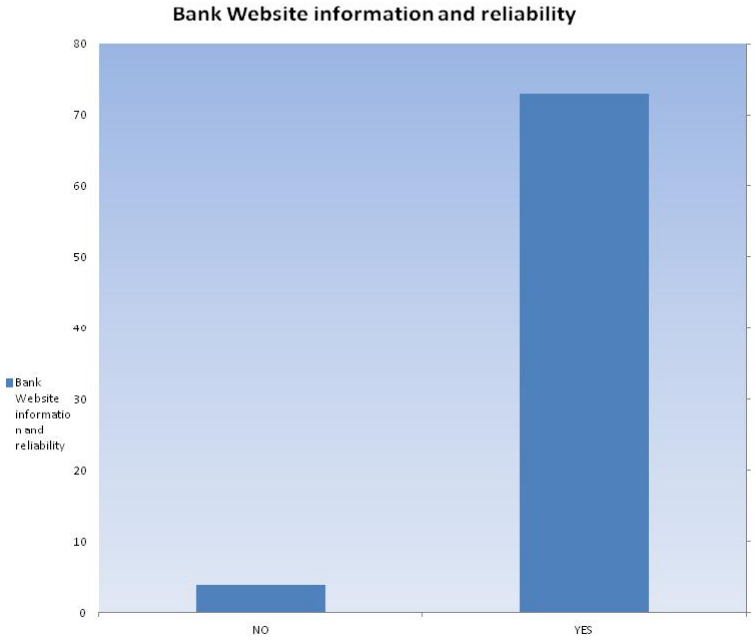

Figure 5.23: Bank Website information and reliability

5.6.7 Website information and customer assurance

Information in the website was shown to enhance the customer's assurance in most of the cases (70) (Figure 5.24) and (Table C.24 in Appindex C).

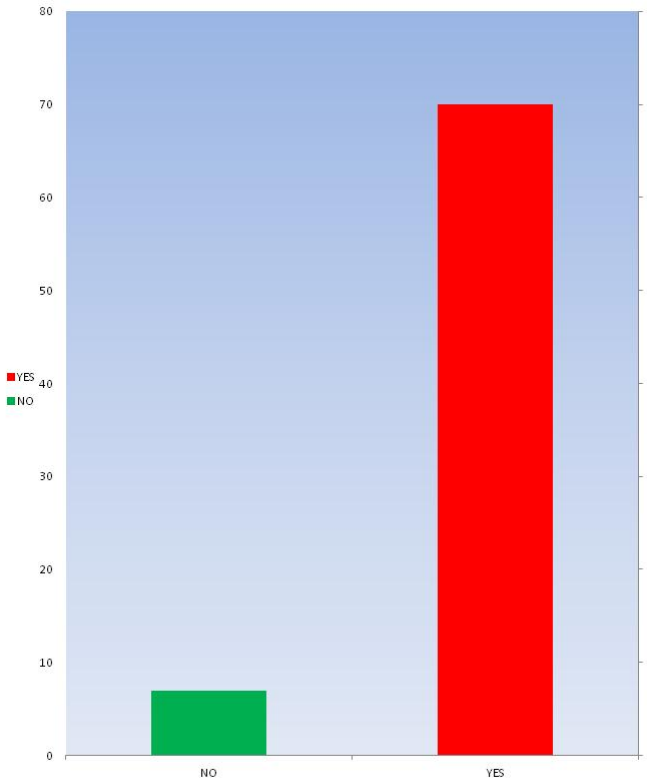

Figure 5.24: Website information and assurance

5.6.8 Logon process and security

In most cases (72) the customers feel that their logon process is secure while in 5 cases don not feel that (Figure 5.25) and (Table C.25 in Appindex C).

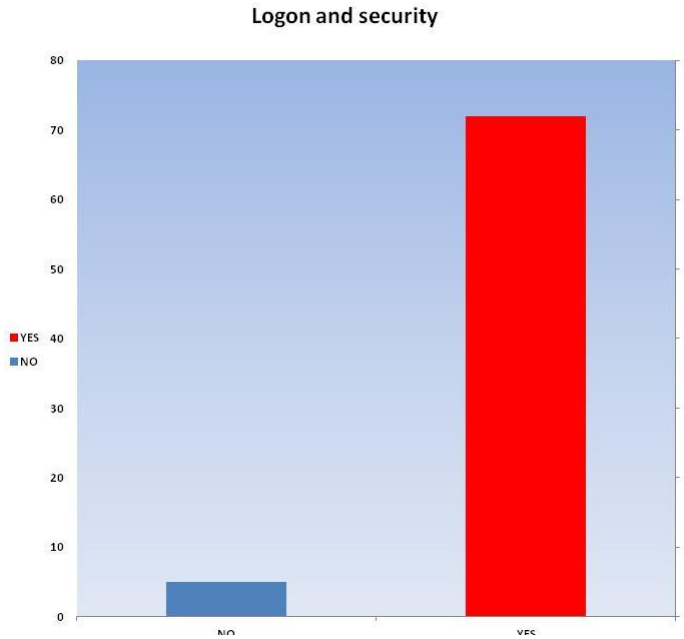

Figure 5.25: Logon and security

5.6.9 Bank website and trust

It was found that 69 customers feel that their bank website reflected trust while 8 participants argued against that (Figure 5.26) and (Table C.26 in Appindex C).

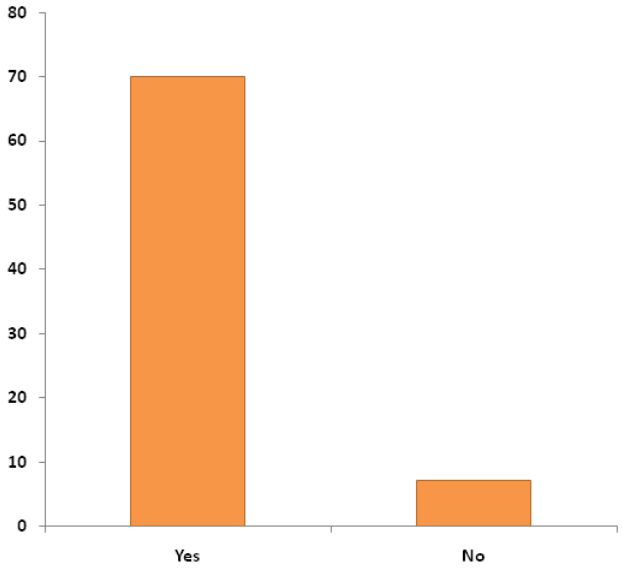

Figure 5.26: Bank website and trust

5.6.10 Website structure and customer 'feel good' factor

Most customers (70) felt that website structure would enhance their feel good factor while 7 participants felt that it would reduce their confidence in the service (Figure 5.27) and (Table C.27 in Appindex C).

Figure 5.27: website structure and customer feel good factor

5.6.11 Factors increasing online trust

Security was the most important factor that increased customers' trust with online banking services in most cases (69) while in 8 cases multiservice availability was most important (Figure 5.28) and (Table C.28 in Appindex C).

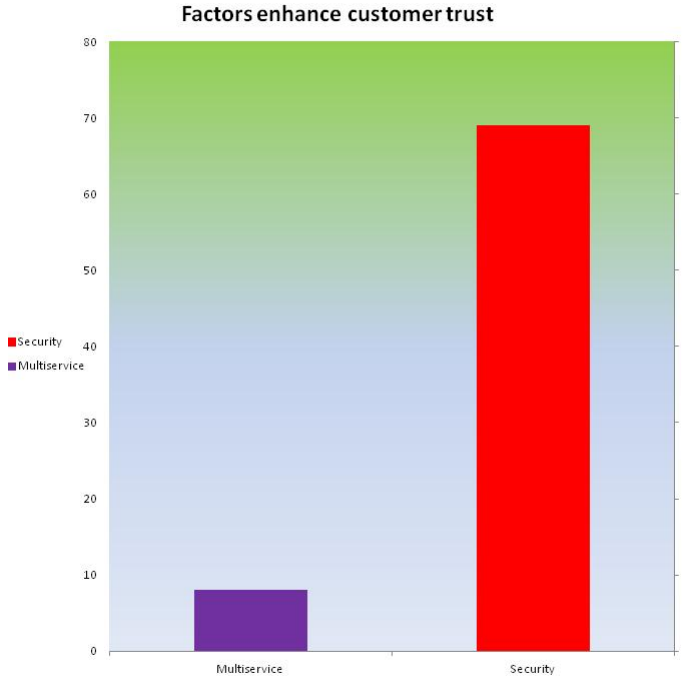

Figure 5.28: Factors enhancing customer trust

5.6.12 Continuous modification of the website and trust

It was found that continuous modification to the bank website improved the customers trust in most cases (69) while in 9 cases these changes have no effect (Figure 5.29) and (Table C.29 in Appindex C).

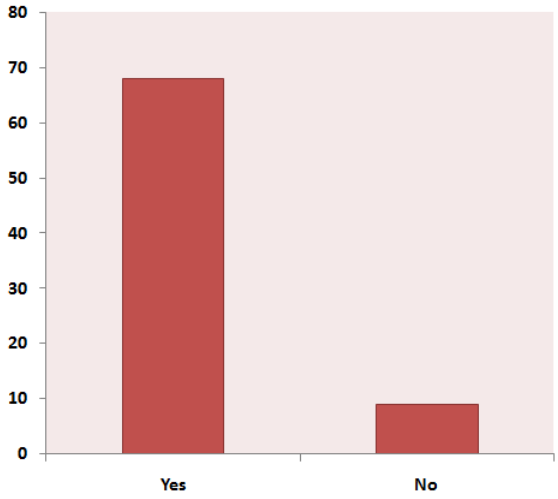

Figure 5.29: website modification and trust

5.6.13 Online transaction and time

Most customers (75 cases) suggested that transactions through the online service will reduce the time spent banking while 2 cases argued that there was no effect on time (Figure 5.30) and (Table C.30 in Appindex C).

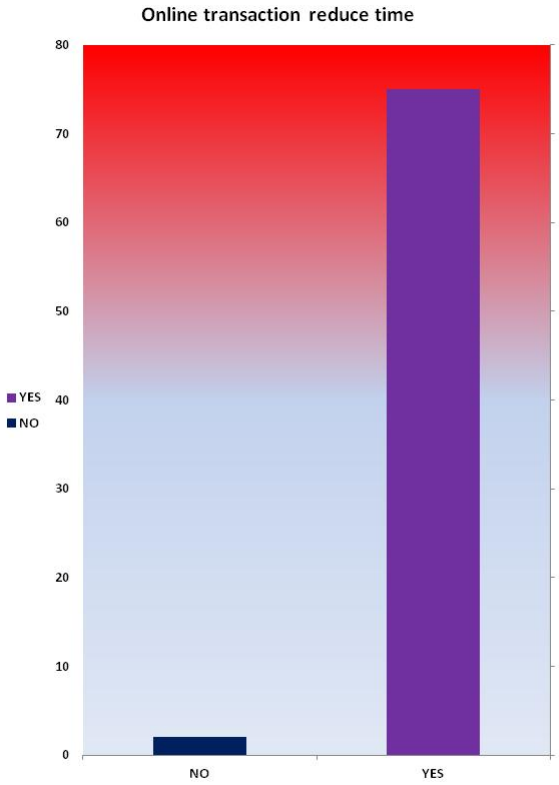

Figure 5.30: Online transaction reduce time

All the above results showed that structural assurance is an important factor in online banking adoption which this indicates that structural assurance H6 positively enhances online banking adoption.

5.7 Perceived site quality H7

Perceived site quality was investigated through identification of the meaning of trust to customers, the bank website and trust, bank website and errors, website and trust reflecting, website quality and users trust, bank logo and website, distinguishing between imitation and original websites and professional Web sites and trust.

5.7.1 Trust meaning for the customers

The meaning of trust for customers was security in most cases (60 cases) while in 17 cases trust was indicated by privacy and navigability (Figure 5.31) and (Table C.31 in Appindex C).

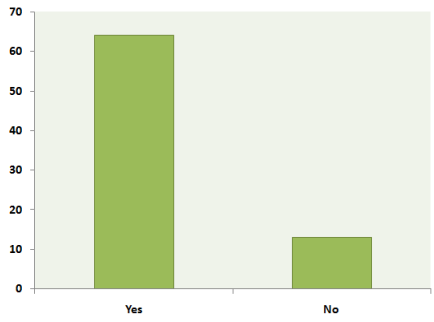

Figure 5.31: Word trust meaning for customers

5.7.2 Bank website and trust

Most cases (70) trusted their bank website and 7 does not (Figure 5.32) and (Table C.32 in Appindex C)

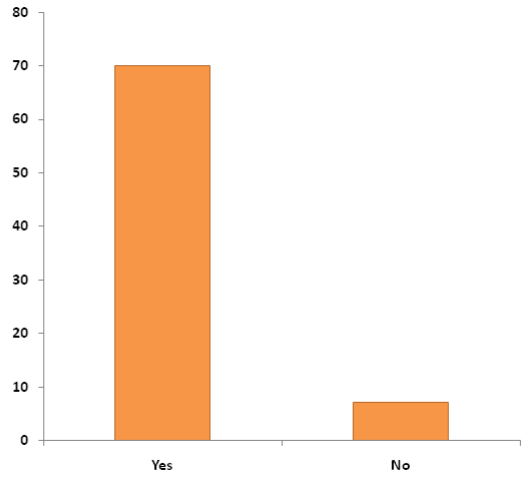

Figure 5.32: Bank Website trust

5.7.3 Bank website and errors

Bank customers felt that bank websites are not free from errors while 31 cases felt that bank websites are free from errors (Figure 5.33) and (Table C.33 in Appindex C).

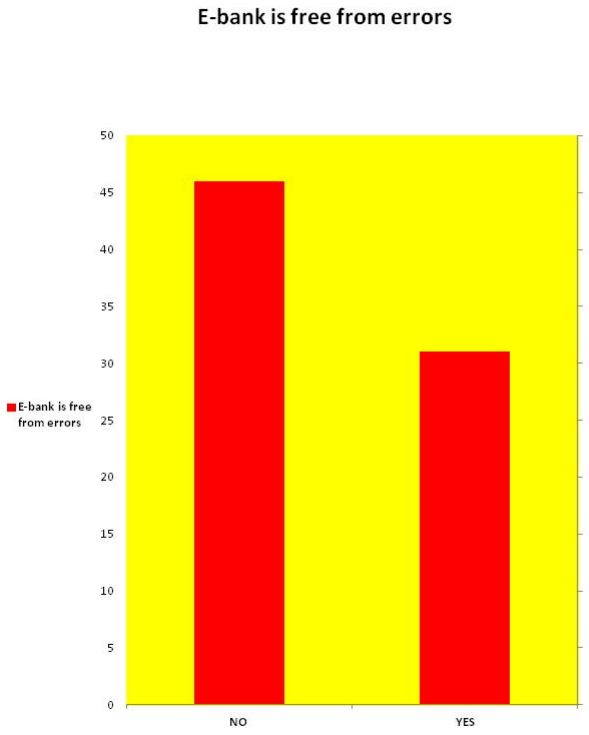

Figure 5.33: E-bank is free from errors

5.7.4 Website reflecting trust

It was found that looking at the Web site will result trust in most customers (55) while in 22 cases website not reflecting trust (Figure 5.34) and (Table C.34 in Appindex C).

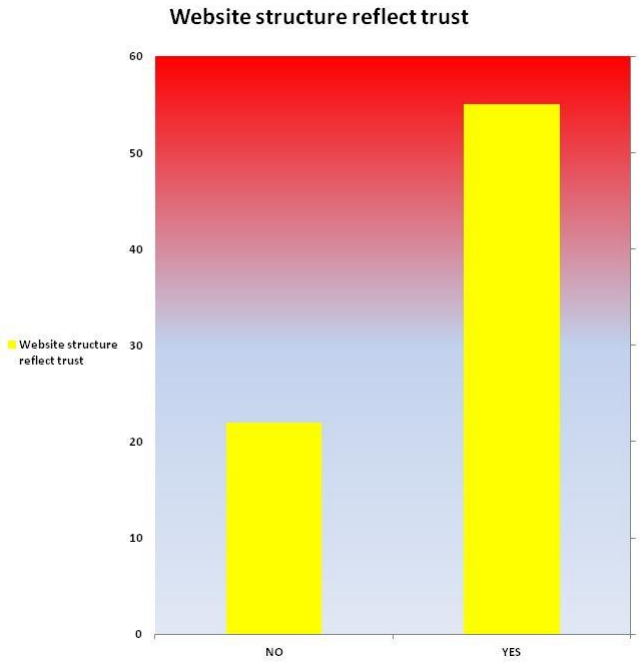

Figure 5.34: Website structure reflects trust

5.7.5 Website quality and users trust

The website quality was found to increase customers' trust in most cases (64) while in 13 cases website quality did not increase customer trust (Figure 5.35) & (Table C.35 in Appindex C).

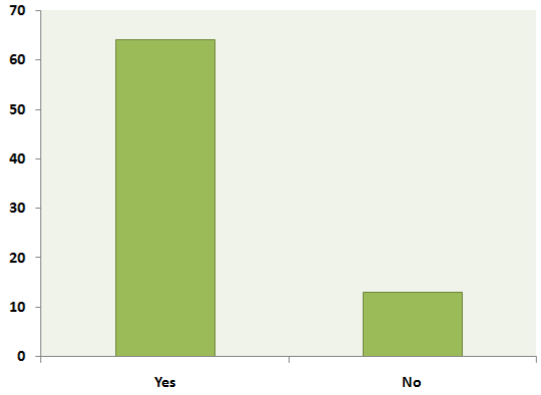

Figure 5.35: Website quality and users trust

5.7.6 Bank logo will indicate the legal Website

In most cases (57) customers believed that the bank logo indicates a legal website while in 20 cases the bank logo did not indicate a legal site (Figure 5.36) and (Table C.36 in Appindex C).

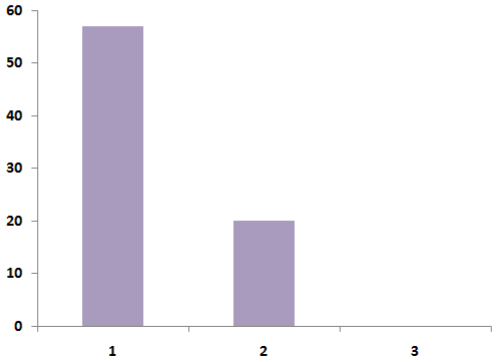

Figure 5.36: Bank logo indicate legal website

5.7.7 Distinguish between the imitation and the original website

Customers can distinguish between imitation and original websites through the URL www.bank name in 36 cases while in 41 customers, the contents and professional structure of the website indicate an original website (Figure 5.37) and (Table C.37 in Appindex C).

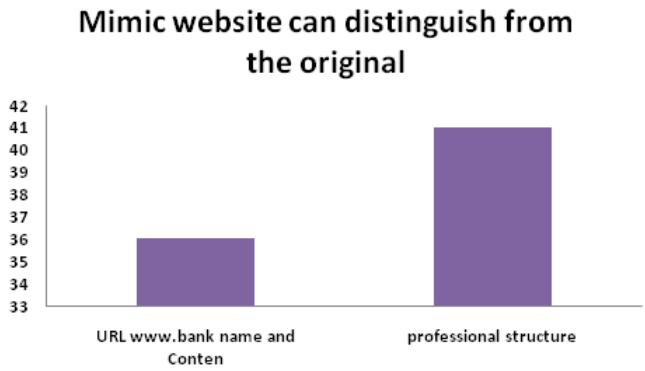

Figure 5.37: Imitation websites distinguished

5.7.8 Professional websites and trust

Professional website was founded to increase customers' trust in 68 of the cases while this had no effect on 9 customers (Figure 5.38) and (Table C.38 in Appindex C).

All the above results indicate that perceived site quality has a positive impact on customer to use online service which in turn, indicates that perceived site quality H7 enhances online banking adoption.

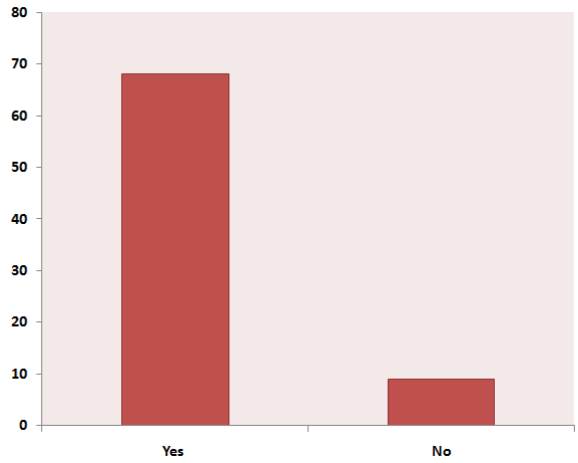

Figure 5.38: Professional website and trust

5.8 Statistical analysis

Statistical analysis for personal information which included gender, age and education and its relation to different hypotheses in research questionnaire was undertaken by obtaining P values. This correlation was made because personal information showed a positive effect on the online banking adoption from this study and previous investigations. The P value was obtained statistically by using descriptive frequencies for obtained results and from personal information parameters (gender, age and education). This analysis was conducted by using the BioCal statistical method. When the P value is <0.005 this indicates a significant correlation. Table A showed P valuse obtained from all hypotheses in relation to gender. There was a significant correlation with all parameters (questions/hypotheses) with gender except on the following variables bank name, customer ease of trust, bank free from error and ability to distinguish imitations from the genuine website (Table A). These results indicate that gender is significant for most of the variables in the questionnaire.

Table A (Gender's P Value)

Question	Gender's P Value
Bank Name	0.571 ×
Online Bank Ac	>0.0005 √
Bank Acc Access	>0.0005 √
Time Acc Bank Access	0.001 √
Years Using Inter	0.001 √
Eas of Trusting	0.169 ×
Do You Trust E-bank	>0.0005 √
Do you Feel Bank Site is Reliable	>0.0005 √
Is Your Online Bank Service Known	>0.0005 √
Do You Know About E-bank Service Through	0.003 √
Does Your Bank have a good Reputation	>0.0005 √
E-bank Keep its Commitments	>0.0005 √
E-bank Performs Business In A proper Way	>0.0005 √
When You Make Transaction You Do so Through	0.001 √
Technology Used For Online	>0.0005 √
Which Factors Are Important When Using Website	>0.0005 √
Your Participation Will Depend On	>0.0005√
Security Measures Provide Save Environ	>0.0005
Which Will Enhance Your Participation	0.003 √
Information On Website Assurance	>0.0005√
Your logon Is Secure	>0.0005 √
Bank Website Reflect Trust	>0.0005 √
Website Structure Will	>0.0005 √
Which Will Increase Your Trust	>0.0005 √
Website Modification Will Improve Your Trust	>0.0005 √
You Use Online Transaction Because It Reduces Time	>0.0005 √
Word Trust Mean	>0.0005 √
Do You Trust Bank Web Site	>0.0005 √
Do You Feel E-bank Is Free From Error	0.173 ×
By Looking At Website It Reflects Trust	0.008 √
Website Quality Increases Users Trust	>0.0005 √
Bank Logo Indicate Legal Website	0.002 √
Imitation Website Can be Distinguish From the Original	0.650 ×
Professional Websites Increase Your Trust	>0.0005 √
Gender's P Value	>0.0005 √

Table 5.1: Table (A Gender's P Value)

From the obtained results it is clear that the Gender's P Value is Significant

It was found that the P value of age was also significant in all hypotheses except with respect to: bank name, ease of trusting, website reflecting trust, bank logo indicates a legal website and ability to distinguish imitation websites from the original (Table B).

Table B (Age's P Value)

Question	Age's P Value
Bank Name	0.667 ×
Online Bank Ac	0.015 √
Bank Acc Access	>0.0005 √
Time Acc Ban Ac	0.037 √
Years Using Inter	0.024 √
Easy To Trust	0.759 ×
Do You Trust E-bank	>0.0005 √
Do you Feel Bank Site Reliability	>0.0005 √
Is Your Online Bank service Known	>0.0005 √
Do You Know About E-bank Service Through	>0.0005 √
Does Your Bank have A good Reputation	>0.0005 √
E-bank Keep Its Commitment	>0.0005 √
E-bank Performs Business In A proper Way	>0.0005√
When You Make Transaction You Do It Through	0.024√
Technology Used For Online Service Improve Your Assurance	>0.0005 √
Which Factors Are Important When Using Website	>0.0005 √
Your Participation Will Depend On	>0.0005 √
Security Measures Provided Save Environ	>0.0005 √
Which Will Enhance Your Participation	>0.0005 √
Information On Website Assures You	>0.0005 √
Your logon Is Secure	>0.0005 √
Bank Website Reflects Trust	>0.0005 √
Website Structure Will	>0.0005 √
Which Will Increase Your Trust	>0.0005
Website Modification Will Improve Your Trust	>0.0005 √
You Use Online Transaction Because It Reduces Time	>0.0005 √
Word Trust Means	0.015 √
Do You Trust Bank website	>0.0005 √
Do You Feel E-bank Is Free From Error	0.010 √
By Looking At Website It Reflects Trust	0.152 ×
Website Quality Increases Users Trust	0.001 √
Bank Logo Indicate Legal Website	0.056 ×
Imitation website Can be Distinguished From The Original	0.095 ×
Professional Websites Increase Your Trust	>0.0005 √
Age's P Value	>0.0005 √

Table 5.2: Table (B Age's P Value)

From the obtained results it is clear that the Age's P value is significant

It was found that educations P value was significant for all hypotheses except for the following questions (hypotheses): Do you know about e-bank service, which will enhance your participation, e-bank is free from error and ability to distinguish imitation websites from the original (Table C).

Table C (Education's P Value)

Question	Education's P Value
Bank Name	0.011 √
Online Bank Ac	>0.0005 √
Bank Acc Access	>0.0005 √
Time Acc Ban Ac	>0.0005 √
Years Using Inter	>0.0005 √
Easy To Trust	0.001 √
Do You Trust E-bank	>0.0005 √
Do you Feel Bank Site Reliab	>0.0005 √
Is Your Online Bank service Known	>0.0005 √
Do You Know About E-bank Service Through	0.263 ×
Does Your Bank Have A good Reputation	>0.0005 √
E-bank Keep Its Commitment	>0.0005 √
E-bank Perform Business In A proper Way	>0.0005 √
When You Make Transaction You Do It Through	>0.0005 √
Technology Used For Online Service Improve Your Assurance	>0.0005 √
Which Factors Are Important When Using Webs	>0.0005 √
Your Participation Will Depend On	>0.0005 √
Security Measures Provided Save Environ	>0.0005 √
Which Will Enhance Your Participation	0.263 ×
Information On Website Assure You	>0.0005 √
Your logon Is Secures	>0.0005 √
Bank Website Reflects Trust	>0.0005 √
Website Structure Will	>0.0005 √
Which Will Increase Your Trust	>0.0005 √
Website Modification Will Improve Your Trust	>0.0005 √
You Use Online Transaction Because It Reduces Time	>0.0005 √
Word Trust Mean	>0.0005 √
Do You Trust Bank Web Site	>0.0005 √
Do You Feel E-bank Is Free From Error	0.755 ×
By Looking At Website It Reflects Trust	>0.0005 √
Website Quality Increases Users Trust	>0.0005 √
Bank Logo Indicate Legal Website	>0.0005 √
Imitation Website Can be Distinguished From The Original	0.219 ×
Professional Website Increase Your Trust	>0.0005 √
Education's P Value	>0.0005 √

Table 5.3: Table C (Education's P Value)

From the obtained results it is clear that the imitation P value is significant All research hypothesis (H2-H7) showed significant correlation with personal information H1 (Table D) and as mentioned earlier that personal information positively enhances online banking adoption. This indicates that this study research framework hypotheses (H1-H7) enhances online banking adoption.

From the obtained results it is clear that the personal information's P value is significant *Red values indicate non-significant P values.

Table D (Personal Information's P Value)

Question	Gender	Age	Education
Bank Name	0.571 ×	0.667 ×	0.011 √
Online Bank Ac	>0.0005 √	0.015 √	>0.0005√
Bank Acc Access	>0.0005 √	>0.0005√	>0.0005√
Time Acc Ban Ac	0.001 √	0.037 √	>0.0005 √
Years Using Inter	0.001 √	0.024 √	>0.0005 √
Easy To Trust	0.169 ×	0.759 ×	0.001 √
Do You Trust E-bank	>0.0005 √	>0.0005 √	>0.0005 √
Do you Feel Bank Site is Reliable	>0.0005 √	>0.0005 √	>0.0005 √
Is Your Online Bank service Known	>0.0005 √	>0.0005 √	>0.0005 √
Do You Know About E-bank Service	0.003 √	>0.0005 √	0.263 ×
Does Your Bank have A good Reputation	>0.0005 √	>0.0005 √ √	>0.0005
E-bank Keep Its Commit	>0.0005 √	>0.0005 √	>0.0005 √
E-bank Perform Business probably	>0.0005 √	>0.0005 √	√ >0.0005
When You Make Transaction You Do It	0.001 √	0.024 √	> √0.0005
Technology Used For Online Service	>0.0005 √	>0.0005 √	>0.0005 √
Which Factors Are Important When Use	>0.0005 √	>0.0005 √	√>0.0005
Your Participation Will Depend On	>0.0005 √	>0.0005 √	>0.0005 √
Security Measures Provided Save Environ	>0.0005 √	>0.0005 √	>0.0005 √
Which Will Enhance Your Participation	0.003 √	>0.0005 √	0.263 ×
Information In Website Assures You	>0.0005 √	>0.0005 √	>0.0005 √
Your logon Is Secure	>0.0005 √	>0.0005 √	>0.0005 √
Bank Website Reflects Trust	>0.0005 √	>0.0005 √	>0.0005 √
Website Structure Will	>0.0005 √	>0.0005 √	>0.0005 √
Which Will Increase Your Trust	>0.0005 √	>0.0005 √	>0.0005 √
Website Modification Will Improve Your	>0.0005 √	>0.0005 √	>0.0005 √
You Use Online Transaction Because It	>0.0005 √	>0.0005 √	>0.0005 √
Word Trust Means	>0.0005 √	0.015 √	>0.0005 √
Do You Trust Bank Web Site	>0.0005 √	>0.0005 √	>0.0005 √
Do You Feel E-bank Is Free From Error	0.173 ×	0.010 √	0.755 ×
By Looking At Website It Reflects Trust	0.008 √	0.152 ×	>0.0005 √
Website Quality Increases Users Trust	>0.0005 √	0.001 √	>0.0005 √
Bank Logo Indicates Legal Website	0.002 √	0.056×	>0.0005 √
Imitation Websites Can be Distinguished From The Original	0.650 ×	0.095 ×	0.219 ×
Professional Websites Increase Your Trust	>0.0005 √	>0.0005 √	>0.0005 √
Personal Information's P Value	>0.0005 √	>0.0005 √	>0.0005 √

Table 5.4: Table D (Personal Information's P Value)

5.9 Summary

Questionnaire for factors affecting customer trust for online banking were collected from 100 participants only 77 participants have an online banking account. Summary fro results are given in the Table (5:5)

Table Summary

Itm	Description	No of responces
Gender effect	Gender distribution	54.4% M 44.1% F
Education effect	Postgraduate	68%
Access online banking acc	In three months interval	98%
Internet use	More than one year experince	100%
Trust effect	Personal ability to trust	62%
Freud effect	Customer trust in case of fraud	79%
Web site reliability	The customer believes that bank Web site is reliable	95%
Repuation	The customer believes that the bank has a good reputation	95%
Sources for online banking	Friends, TV and newspaper / bank staff	22,5%71,5
Commitmints	The customer believes with bank commitment	93%
Bank business performance	The customer believes in bank business performance	76,6%
Transaction	Thorough online/ In branch	23%
Technology	Customer assurance	93%
Web site security	Security importance	83%
Web site structure	Enhance customer participtation	84%
Multifunctional Web site	Enhance customer participation	71%
Professional Web site	Enhance customer participation	88%

Table 5.5: Table Summary

Chapter 6

Conclusion and Future Work

Objectives:

- Summarize the work in this study
- Give a statement of evaluation
- List the main contributions of this work
- Give the future work that can be obtained from this thesis

6.1 Research Summary and Conclusion

1. The first chapter in this thesis is about the motivation and rationale for conducting research, the gap between business and information technology, the purpose of the research, and the research question and organization of the thesis.
2. Chapter two started with a literature review about the gap formed between business and information technology which occurs due to miscommunication

and imbalance between the two entities. It also offers an idea about how to bridge this gap between business and information technology through different steps (consolidation, standardization and communication). The co-evolution between business and technology required proper alignment between the two domains.

However, sometimes although the alignment is plac, due to external factors such as the global economic crisis, failure in business may occur. Business reactivity is important for its evolution.

This indicates that businesses which function as living organism is evolving and reacting with information technology more than those businesses which act as machines [57]. Business evolution rate is influenced by alignments between business and information technology strategies and planning [119]. The co-evolution process required five essential properties (multi levelness, multidirectionality, nonlinearity, positive feedback and path and history dependence) which were explained in detail in a previous chapter [21].

The co-evolutionary information system model was described with its different levels (strategic, operational and individual) and each level was explained [119]. Different types of co-evolution (mutation, predator, supernormal, inbreeding and symbiotic) were also described. The legsy system (a system that doesn't meet business targets and evolution) was defined and its effect in gap formation was discussed. In addition, different factors that contributed to legacy problem (business, organizational and technological factors) were investigated.

Different forms of information technology evolution (planned and unplanned) were discussed with an explanation for the framework of planned evolution [139]. Different steps of an information system co evolutionary plan from a previous study were also provided [51].

The effect of website quality on online banking services was discussed. And focused on factors affecting trust (shared value, communication and opportunistic behavior, security and age). Trust factors for online banking include trusting beliefs, disposition to trust, institutional-based trust, reputation, fa-

miliarity, perceived site quality, general web experience and trusting intention. Types of co-evolution, the legacy system and gap formation, process and forms of information system evolution, and the steps of information system co-evolutionary plans were described.

This study included a section about online banking hypotheses which included a security model for e-banking, online banking and a description of the extended theory of planned behavior, innovation diffusion theory and the decomposed theory of planned behavior.

3. Chapter three contains the the proposed framework for online banking adoption which is constructed according to the key points in the Literature review and previous studies that inform different online bank hypotheses. According to this framework the questionnaire was formulated and distributed to online bank users in the Saudi community.

4. The fourth chapter contains the design of the questionnaire including the proposed research framework. The seven hypotheses constituting the framework were discussed. These included personal hypotheses on personal information H1, personal experience H2, disposition to trustH3, reputation H4, trusting belief H5, structural assurance H6 and perceived site quality H7.

   This study aimed to investigate the proposed research framework for online banking adoption. The research framework was investigated through the distributed questionnaire. Questionnaires were distributed to 150 participants with 100 participants responding. In the event only 77 participants had an online banking account. and the data from all these cases from the main focus of the analyses.

5. Chapter five contains results and findings. In this section personal information H1 (age, gender and education) and all other hypotheses which build our framework were studied. Hypotheses were investigated and analysed and the results were given at the end of the chapter.

The questionnaire investigates the proposed research framework hypotheses and its effect on online banking adoption. For personal information H1 (include age, gender

and education) results showed that the number of males and females were 42 and 35 respectively. The age group distribution was 52 (20- 39 years) and 25 (> 40 years). Postgraduates participants were 53 and undergraduates were 24. Participants were customers of either international (37) or national banks (40).

Personal experiences (H2 investigation) found that 76 participants accessed their online banking account at some point; 58 participants accessed their account 1-19 times and 19 participants accessed their account 20-30 times in a three month period. It also found that 59 participants less than 10 years and 18 participants > 10 years.

Disposition to trust H3 was investigated. Results showed that 48 participants found it easy to trust others and while 29 participants found it difficult to trust others. It was found that in the case of fraud 61 participants trusted their bank while 16 participants did not. From all cases, 73 feel that a bank website is reliable while 4 do not.

Reputation (H4) was investigated. In 73 cases the online bank service was well known and 4 participants did not think that online banking service are well known. It was found that in 55 cases bank service had been learned about by interacting with the bank staff and in 22 cases from information was gained from friends, TV and newspaper. It was suggested that the bank had a good reputation in 73 cases.

Trusting beliefs (H5) were studied. The Results found that in 73 cases participants believed that an e-bank kept its commitments. and in 72 cases participant felt that the e-bank business is perfect. It was found that 59 participants preferred to make transactions through the online banking and 18 through a bank branch.

Structural assurances (H6) was investigated. Results showed that the technology used for online service improved customers assurance in 72 cases. It was also found that security and contents were the most important factor in 68 cases. Participation in online services was found to depend on website structure in 65 cases. Security measures indicated a safe environment in 70 cases. Multifunctional websites increase participation in 55 cases and the needles textual Web in 22 participants. Information on the website was shown to enhance the customer's assurance in 70 cases. atahe logon process is suggested to be secure in 72 cases. The bank website reflects trust in 69 cases. website structure found to enhance the 'feel good' factor in 70 cases. Security was an important factor to increase customers' trust in 69 cases. Continu-

ous modification to the bank's website found to improve the customers trust in 69 instances. Transactions through the online service were found to be the preferred method in 75 cases.

Perceived site quality (H7) was investigated. The meaning of rust meaning was security in most of the cases 60 cases and in 17 cases privacy and navigability indicated trust. It was found that in 70 cases participants trusted their bank website and 7 cases did not. Results showed that 46 of these bank customers felt that bank websites are not free from errors and 31 cases were. It was also found that the website design will result in trust in 55 cases while in 22 cases it did not reflect customer's trust. website quality was found to increase customers' trust in 64 cases and in 13 cases it did not. The Bank's logo suggested a legal website to 57 customers while in 20 cases the bank logo did not have this effect. Customers were found to differentiate between legal sites and imitation websites through their URL www.bank name in 36 cases and from website contents and professional structure in 41 cases. Professional website were found to increase customers' trust in 68 cases while this had no effect on 9 customers.

There was a strong correlation with personal information (H1) and all other hypotheses with P values of <0.005 which indicates that all hypotheses have a strong effect on online banking adoption.

All results support the proposed research framework and its hypotheses which indicates that the proposed research framework is satisfied and can be used to enhance online banking adoption.

This research framework studied the most important factors for customer adoption of online banking. This research framework's hypotheses were good and the research framework was satisfied.

Due to time pressure other factors were not covered. Other parameters included things such as customer's culture, bank commitment, network quality, and world economics which could all be studied in further research.

6.2 Future Work

This thesis presents a co-evolutionary framework that can be used to bridge the gap between business and information systems. It contains the most important factors which enhancing online banking adoption. However, there is considerable agreement between several authors that the gap cannot be removed completely. But hopefully this research framework will reduce the gap's formation and will enhance the online banking adoption. The framework for online bank adoption is one of the important and interesting topics for the bank business during globalization. This is because bank can increase its profits by concentrating on the factors described in the research framework hypotheses.

In accordance to the work done in this thesis and due to time pressure certain issues were not addressed.

- These include the customer's culture which will affect trust in use online banking services. In an online banking context, customers may experience difficulty in using the service due to lack of insufficient knowledge with technology or due to negative experience with the service. In addition, many customers have difficulty dealing with online service and be unable to perform such actions without help from others. For instance, older people or lay individuals usually try to find someone to help them withdraw money from cash machine and to use online services. It is very important that customers trust the services provided by online banking and feel confidence using them. Customers who have no previous experience with online banking or never use internet for shopping will prefer the traditional methods of transacting business and will visit the bank branch instead. It was suggested that familiarity with using technology will enhance customer ability to use online banking services.

  In general, technological experience has positive impact on customer expectations and customers with previous experience with online services are more confident using online banking services.

- Cultures with different languages may have difficulty in using services especially those individuals where have no English language background.

Different cultures can have different influence on online banking use and this issue needs to be study more deeply. The bank's commitment is another factor that effect online banking adoption. Commitment is a guarantee or a recognition of responsibility to other parties. Online banking customers must be sure that the commitment is never broken and believe that the bank will keep its promises. If commitments are broken by the bank this will indicate that commitment were never present.

The Bank must safeguard the customer's privacy and the customer's information must be highly confidential. The Bank should never provide customer's information to third parties and must make this a commitment to all customers. It is clear that a bank that is highly committed will have more customers and more online bank users. This commitment will enhance the customer's trust and customers are, therefore, unlikely to move to another bank and will be more loyalt to 'their' bank. It was also found that banks with low commitments levels will have less customer's loyalty and customers are more likely to move to other banks. If customer becomes more committed to the bank they will become more adopted to using online service. Bank commitments and different reasons for ensuring customer commitments need more investigations.

- Network quality is another important factor influncing online bank adoption. Performance of the network is important for online customer using the service. In case of poor quality, customers will be unlikely to use the service and will prefer to visit bank branch instead.
- The network quality, availability of computers and easy access to internet all have a positive effect on online banking customer's adoption.

This adoption for online banking is suggested to be at a slower rate in developing countries as compared to USA and Europe. Recently online banking services become the preferable choice for bank business in developing countries due to the lower cost to the bank.

This may give idea that network quality in developing countries is becoming better and is widely available. More investigations about the effect of adoption due to network quality and performance with online banking need further

study.

- World economics is another factor for online banking adoption. It was found that the world economic crisis have little effect on adoption of online banking. This is mainly because the online banking business depends on other factors which are different than other businesses. In fact bank business depending on internet is less affected by the current economic crisis than those businesses that depend on traditional methods. However, more researches is required to study the direct and indirect effect of economy on online banking adoption.

  This study can be extend by applying the same framework to Western countries and comparing with results with those obtained from this study. This will perhaps shows some different due to the different cultures Involved. Another study could be conducted through comparing the adoption of technology in other Arab countries and comparing it with this study. More study investigate the online banking adoption in reseaech study and in low economically countries where the availability of internet and PC are limited to certain areas. In addition some factors in this research framework can be used to compare the adoption for online services between those countries with low individual income and those with high personal incomes. Online banking may be difficult to deal with in poor countries due to lack of access to requirements such as PCs and the internet.

  Online banking adoption is a broad topic and other socio-economic factors need to be investigated. These socio economic factors include income, education, occupation, wealth and employment. In general, business and IT have different rates of evolution, and for future studies the framework can be establish according to the situational requirements of a given context.

6.3 Post Script

For successful e-banking business the gap between information technology and business must be bridged. This can be undertaken through good communication between business representatives or higher administrators and managers of the information technology in a given situation. More information about business targets and the tools required is very important to plan a clear strategy to achieve the targets of the parties involved.

A study for different factors that enhance e-banking adoption by customers will improve e-banking business and profits. These include the bank's reputation, the services provided through the website, professional website structure including security and anti-spay that build in software and customers' requirements according to different variables such as age, gender and education; all are important for e-banking to survive in its a competitive environment.

Bibliography

[1] Ajzen, I. [1985], From intentions to actions: A theory of planned behavior, *in* J. Kuhl and J. Beckmann, eds, 'Action Control', SSSP Springer Series in Social Psychology, Springer Berlin Heidelberg, pp. 11–39.
URL: *http://dx.doi.org/10.1007/978-3-642-69746-3_2*

[2] Al-Hajri, S. and Tatnall, A. [2008], 'Adoption of internet technology by the banking industry in oman: A study informed by the australian experience', *Journal of Electronic Commerce in Organizations* **6**(3), 20–36.
URL: *http://www.scopus.com/inward/record.url?eid=2-s2.0-56649120616&partnerID=40&md5=b5301e45a9f2bdb4df51ea73165ac3d4*

[3] Almogbil, A. [2005], 'Security, perceptions, and practices: challenges facing adoption of online banking in saudi', *Unpublished Ph. D. Thesis, George Washington University, Washington* .

[4] Antonio, D. [n.d.], 'Ageing population the ageing population and ict', Tiresias.org.
URL: *http://www.tiresias.org/accessible_ict/ageing_population/ict.htm*

[5] Au, A. K.-m. and Enderwick, P. [2000], 'A cognitive model on attitude towards technology adoption', *Journal of Managerial Psychology* **15**(4), 266–282.

[6] Barnes, S. J. and Vidgen, R. T. [2001], Assessing the quality of auction web sites, *in* 'System Sciences, 2001. Proceedings of the 34th Annual Hawaii International Conference on', IEEE, pp. 10–pp.

[7] Bartel, A. P. and Sicherman, N. [1999], Technological change and the skill acquisition of young workers, Technical report, National Bureau of Economic Research.

[8] Baumol, W. J. [1986], 'Williamson's the economic institutions of capitalism',

The RAND Journal of Economics **17**(2), pp. 279–286.
URL: *http://www.jstor.org/stable/2555390*

[9] Beiginia, A., Besheli, A., Ahmaid, M. and Soluklu, M. [2011], '"examine the customer's attiude to mobile banking based on extended theory of planned behaviour (a case study in en bank)"', *International Bulletin of Business Administration* .
URL: *http://www.eurojournals.com*

[10] Belassi, W. and Tukel, O. I. [1996], 'A new framework for determining critical success/failure factors in projects', *International journal of project management* **14**(3), 141–151.

[11] Benbya, H. and McKelvey, B. [2006], 'Using co-evolutionary and complexity theories to improve is alignment: a multi-level approach', *Journal of Information Technology* **21**(4), 284–298.

[12] Bhattacharya, K. and Saha, S. [2004], Trust dimensions in e-retailing: A strategic exploration, *in* 'Engineering Management Conference, 2004. Proceedings. 2004 IEEE International', Vol. 2, IEEE, pp. 825–828.

[13] Blaikie, N. [2007], *Approaches to social enquiry: Advancing knowledge*, Polity Press.

[14] Borg, W. R. and Gall, M. D. [1983*a*], 'Educational research: An introduction'.

[15] Borg, W. R. and Gall, M. D. [1983*b*], 'Educational research: An introduction'.

[16] Burgelman, R. A. [1994], 'Fading memories: A process theory of strategic business exit in dynamic environments', *Administrative Science Quarterly* **39**(1), 24–56.
URL: *URL: http://www.jstor.org/stable/239349310.2307/2393493*

[17] Ceaparu, I., Demner, D., Hung, E., Zhao, H. and Shneiderman, B. [2002], "'in web we trust: Establishing strategic trust among online customers", *in* 'New Directions in Theory and Practice', M. E. Sharpe, Armonk, NY, pp. 90–107.

[18] Chan, I. A. K. and Handford, D. [2003], 'Relationship marketing: customer commitment and trust as a strategy for the smaller hong kong corporate banking sector.', *International Journal of Bank Marketing.* **21**(6/7), 347–358.

[19] Chan, S.-c. and Lu, M.-t. [2004], 'Understanding internet banking adoption and use behavior: a hong kong perspective', *Journal of Global Information Management (JGIM)* **12**(3), 21–43.

[20] Chandio, F. H. [2011], 'Evaluating user acceptance of online banking information systems: An empirical case of pakistan', *Brunel University West London* .

[21] Chang, M. K. and Cheung, W. [2005], Online trust production: Interactions among trust building mechanisms, *in* 'System Sciences, 2005. HICSS'05. Proceedings of the 38th Annual Hawaii International Conference on', IEEE, pp. 181c–181c.

[22] Chang, Y. [2005], 'Dynamics of internet banking adoption'.

[23] Coetzee, M. and Eloff, J. [2005], 'Autonomous trust for web services', *Internet Research* **15**(5), 498–507.

[24] Crotty, M. [1998], *The foundations of social research: Meaning and perspective in the research process*, SAGE Publications Limited.

[25] Cyr, D., Bonanni, C., Bowes, J. and Ilsever, J. [2005], 'Beyond trust: web site design preferences across cultures', *Journal of Global Information Management (JGIM)* **13**(4), 25–54.

[26] Dale, L. and Demetris, M. [2006], 'Consumer perceptions of risk and uncertainty and the implications for behaviour towards innovative retail services: The case of internet banking', *Journal of Retailing and Consumer Services* **13**(6), 431–443.

[27] Damaskopoulos, P. and Evgeniou, T. [2003], 'Adoption of new economy practices by smes in eastern europe', *European Management Journal* **21**(2), 133–145.

[28] Davis, F. D. [1989], 'Perceived usefulness, perceived ease of use, and user acceptance of information technology', *MIS quarterly* **13**(3), 319–340.

[29] Davis, F. D., Bagozzi, R. P. and Warshaw, P. R. [1989], 'User acceptance of computer technology: a comparison of two theoretical models', *Management science* **35**(8), 982–1003.

[30] De Leenheer, P., de Moor, A. and Christiaens, S. [2011], Sbvr-driven informa-

tion governance: a case study in the flemish public administration, *in* 'Semantic Agent Systems', Springer, pp. 69–88.

[31] *definition positivism* [n.d.].
URL: *http://oxforddictionaries.com/definition/english/positivism (Accessed : 1/10/2012)*

[32] DeLone, W. H. [1988], 'Determinants of success for computer usage in small business', *Mis Quarterly* **12**(1), 51–61.

[33] Demeure, V. [2010], 'Facework and utilitarian relevance in the disambiguation of statements with two indirect interpretations', *Journal of Language and Social Psychology* **29**(4), 443–457.

[34] Denzin, N. K. and Lincoln, Y. S. [2000], 'The discipline and practice of qualitative research', *Handbook of qualitative research* **2**, 1–28.

[35] Depew, D. J. and Weber, B. H. [1995], 'Darwinism evolving: Systems dynamics and the genealogy of natural selection', p. 602.

[36] Dooley, K. J. [1997], 'A complex adaptive systems model of organization change', *Nonlinear dynamics, psychology, and life sciences* **1**(1), 69–97.

[37] Dowling, S. [2009], 'Would you work for nothing ?'.
URL: *Available from:http://news.bbc.co.uk/1/hi/magazine/8104924.stm*

[38] Drew, S. [2003], 'Strategic uses of e-commerce by smes in the east of england', *European Management Journal* **21**(1), 79–88.

[39] Eastlick, M. A. and Feinberg, R. A. [1999], 'Shopping motives for mail catalog shopping', *Journal of Business Research* **45**(3), 281 – 290.
URL: *http://www.sciencedirect.com/science/article/pii/S0148296397002403*

[40] Egger, F. N. [2000], "trust me, i'm an online vendor": towards a model of trust for e-commerce system design, *in* 'CHI '00 extended abstracts on Human factors in computing systems', CHI EA '00, ACM, New York, NY, USA, pp. 101–102.
URL: *http://doi.acm.org/10.1145/633292.633352*

[41] Eisenhardt, K. M. [1989], 'Building theories from case study research', *Academy of management review* **14**(4), 532–550.

[42] *Factors That Influence Business Environment* [2012].

URL: *http://www.acme-articles.com/article/Business/Factors That Inuence Business Environment/88444*

[43] Feagin, J. R., Orum, A. M. and Sjoberg, G. [1991], *Case for the case study*, UNC Press Books.

[44] Fishbein, M. and Ajzen, I. [1975], *Belief, attitude, intention and behavior: An introduction to theory and research*, Addison-Wesley Reading MA.
URL: *http://www.istheory.yorku.ca/theoryofreasonedaction.htm*

[45] Fisher, A. [2000], 'Internet buyers are not what you think', *Fortune* **141**(1), 190–191.

[46] Flinders, K. [2011], 'Why do big it projects fail? part one'.
URL: *http://www.computerweekly.com/news/2240106569/Why-do-big-IT-projects-fail-Part-one-The-professionals*

[47] Gefen, D. [2000], 'E-commerce: the role of familiarity and trust', *Omega* **28**(6), 725–737.

[48] Gefen, D., Karahanna, E. and Straub, D. W. [2003], 'Trust and tam in online shopping: an integrated model', *MIS quarterly* pp. 51–90.

[49] Goldsmith, R. E. [2002], 'Explaining and predicting consumer intention to purchase over the internet: an exploratory study', *Journal of Marketing Theory and Practice* **10**(2), 22–28.

[50] Granovetter, M. [1985], 'Economic action and social structure: the problem of embeddedness', *American journal of sociology* pp. 481–510.
URL: *http://www.jstor.org/stable/2780199*

[51] Gupta, N. [2009], Online banking and maslow's hierarchy of needs, *in* 'Gupta banking innovation', Online banking, social media in banking.

[52] Hamadi, C. [2010], 'The impact of quality of online banking on customer commitment', *Communications of the IBIMA* pp. 1–8.

[53] Hamermesh, D. and Gronau, R. [2007], The demand for variety: A household production perspective, IZA Discussion Papers 2767, Institute for the Study of Labor (IZA).
URL: *http://ideas.repec.org/p/iza/izadps/dp2767.html*

[54] Harridge-March, S. [2006], 'Can the building of trust overcome consumer perceived risk online?', *Marketing Intelligence & Planning* **24**(7), 746–761.

[55] Henderson, P. [2000], *Systems engineering for business process change: collected papers from the EPSRC research programme*, Springer Verlag.

[56] Hodgkinson, A. and McPhee, P. [2002], 'Sme information sourcing for innovation and export market development: From local or external networks?', *Faculty of Commerce-Economics Working Papers* p. 54.

[57] Hoy, W. K. and Tarter, C. J. [2004], 'Organizational justice in schools: no justice without trust', *International Journal of Educational Management* **18**(4), 250–259.

[58] Hsu, C.-J. [2008], Dominant factors for online trust, *in* 'Cyberworlds, 2008 International Conference on', IEEE, pp. 165–172.

[59] interactive, E. [2012], 'Internet and mobile users in saudi arabia ksa'.
URL: *http://blog.ethosinteract.com/2012/02/06/internet-user-in-saudi-arabia-ethos-interactive.*

[60] Jacobson, M. J. [2002], Problem solving about complex systems: Differences between experts and novices, *in* 'Fourth International Conference of the Learning Sciences', B. Fishman & S. O'Connor-Divelbiss Eds, pp. 14–21.

[61] Jarvenpaa, S. L., Tractinsky, N. and Saarinen, L. [1999], 'Consumer trust in an internet store: A cross-cultural validation', *Journal of Computer-Mediated Communication* **5**(2), 0–0.

[62] J.H.P., C. M. E. [2005], Autonomous trust for web services. internet research, number 15, pp. 498–507.

[63] Jiang, J. J., Klein, G. and Chen, H.-G. [2006], 'The effects of user partnering and user non-support on project performance', *Journal of the Association for Information Systems* **7**(2), 68–90.

[64] K., L. S. W. [2006.], 'Understanding consumer adoption of internet banking: an interpretive study in the australian banking context.', *Journal of Electronic Commerce Research* **7**(2), 50–66.

[65] Karjaluoto, H., Mattila, M. and Pento, T. [2002], 'Factors underlying attitude

formation towards online banking in finland', *International Journal of Bank Marketing* **20**(6), 261–272.

[66] Kasemsan, M. K. and Hunngam, N. [2011], 'Internet banking security guideline model for banking in thailand', *Communications of the IBIMA* .

[67] Kauffman, S. [1996], *At Home in the Universe: The Search for the Laws of Self-Organization and Complexity: The Search for the Laws of Self-Organization and Complexity*, Oxford University Press, USA.

[68] Kauffman, S. A. [1993], *The origins of order: Self organization and selection in evolution*, Oxford University Press, USA.

[69] Kearns, G. and Lederer, A. L. [2000], 'The effect of strategic alignment on the use of is-based resources for competitive advantage', *The Journal of Strategic Information Systems* **9**(4), 265–293.

[70] Kim, E. and Tadisina, S. [2005], 'Factors impacting customers' initial trust in e-businesses: An empirical study', *Hawaii International Conference on System Sciences* **7**, 170b.

[71] Koeszegi, S. T. [2004], 'Trust-building strategies in inter-organizational negotiations'.

[72] Kolodinsky, J. M., Hogarth, J. M. and Hilgert, M. A. [2004], 'The adoption of electronic banking technologies by us consumers', *International Journal of Bank Marketing* **22**(4), 238–259.

[73] Kramer, R. M. [1999], 'Trust and distrust in organizations: Emerging perspectives, enduring questions', *Annual review of psychology* **50**(1), 569–598.

[74] Lassar, W. M., Manolis, C. and Lassar, S. S. [2005], 'The relationship between consumer innovativeness, personal characteristics, and online banking adoption.', *International Journal of Bank Marketing* **23**(2), 176–199.

[75] Laszlo, K. C. [2001], The evolution of business: learning, innovation and sustainability in the 21st century, *in* '45th Annual Conference of the International Society for the Systems Sciences. Asilomar, California'.

[76] Lattal, K. A. [2008], 'Jeab at 50: Coevolution of research and technology', *Journal of the experimental analysis of behavior* **89**(1), 129–135.

[77] Lee, H. G. and Clark, T. H. [1996], 'Market process reengineering through electronic market systems: opportunities and challenges', *Journal of Management Information Systems* pp. 113–136.

[78] Lee, J. and Rao, H. R. [2007], 'Perceived risks, counter-beliefs, and intentions to use anti-/counter-terrorism websites: An exploratory study of government–citizens online interactions in a turbulent environment', *Decision Support Systems* **43**(4), 1431–1449.

[79] Lee, M. K. and Turban, E. [2001], 'A trust model for consumer internet shopping', *International Journal of electronic commerce* **6**, 75–92.

[80] Lewin, A. Y. and Volberda, H. W. [1999], 'Prolegomena on coevolution: A framework for research on strategy and new organizational forms', *Organization science* **10**(5), 519–534.

[81] Lichtenstein, S. and Williamson, K. [2006], 'Understanding consumer adoption of internet banking: an interpretive study in the australian banking context', *Journal of Electronic Commerce Research* **7**(2), 50–66.

[82] Lincoln, Y. S., Lynham, S. A. and Guba, E. G. [2011], 'Paradigmatic controversies, contradictions, and emerging confluences, revisited', *Denzin HK, Lincoln YS. Handbook of qualitative research. USA: SAGE Publications, Inc* p. 97.

[83] Lindgreen, A. [2003], 'Trust as a valuable strategic variable in the food industry: Different types of trust and their implementation', *British Food Journal* **105**(6), 310–327.

[84] Macinnes, I., Li, Y. and Yurcik, W. [2005], 'Reputation and dispute in ebay transactions', *International Journal of Electronic Commerce* **10**(1), 27–54.

[85] Madhok, A. and Liu, C. [2006], 'A coevolutionary theory of the multinational firm', *Journal of International Management* **12**(1), 1–21.

[86] Magid, I., Tor, G. and Davis, G. B. [1995], 'Testing the determinants of microcomputer usage via a structural equation model', *J. Manage. Inf. Syst.* **11**(4), 87–114.
URL: *http://dl.acm.org/citation.cfm?id=1189604.1189610*

[87] Malaga, R. [2001], 'Web-based reputation management systems: Problems and

suggested solutions', *Electronic Commerce Research* **1**(4), 403–417.
URL: *http://dx.doi.org/10.1023/A:1011557319152*

[88] Man, Y. K. [2006], Factors affecting Customers Trust in Online banking, PhD thesis, Hong Kong Baptist University Hong Kong.

[89] Martin, R. [n.d.], '"5 absolutely essential trust factors your e-commerce website must have." 5 absolutely essential trust factors'.
URL: *http://ezinearticles.com/?5-Absolutely-Essential-Trust-Factors-Your-E-Commerce-Website–Must-Have&id=5273198*

[90] Maslow, A. H. and Lewis, K. [1998], *Maslow's hierarchy of needs*, Business ball.com.
URL: *http://www.businessballs.com/maslow.htm*

[91] Mattila, M., Karjaluoto, H. and Pento, T. [2003], 'Internet banking adoption among mature customers: early majority or laggards?', *Journal of Services Marketing* **17**(5), 514–528.

[92] Mayer, R. C., Davis, J. H. and Schoorman, F. D. [1995], 'An integrative model of organizational trust', *Academy of management review* **20**(3), 709–734.

[93] McDavid, D. [2005], Systems engineering for the living enterprise, *in* 'Systems Engineering, 2005. ICSEng 2005. 18th International Conference on', pp. 244–249.

[94] McKelvey, B. [1999*a*], 'Avoiding complexity catastrophe in coevolutionary pockets: Strategies for rugged landscapes', *Organization Science* **10**(3), 294–321.

[95] McKelvey, B. [1999*b*], 'Self-organization, complexity catastrophe, and microstate models at the edge of chaos', *Variations in organization science: in honor of Donald T. Campbell* pp. 279–307.

[96] McKelvey, B. [2001], 'What is complexity science? it is really order-creation science', *Emergence, A Journal of Complexity Issues in Organizations and Management* **3**(1), 137–157.

[97] McKelvey, B. [2002], Managing co-evolutionary dynamics, *in* '18th EGOS Conference, Barcelona, Spain'.

[98] McKnight, D. H., Choudhury, V. and Kacmar, C. [2002], 'Developing and validating trust measures for e-commerce: An integrative typology', *Information systems research* **13**(3), 334–359.

[99] McKnight, D. H., Cummings, L. L. and Chervany, N. L. [1998], 'Initial trust formation in new organizational relationships', *Academy of Management review* pp. 473–490.

[100] McKnight, H., Kacmar, C. and Choudhury, V. [2003], Whoops... did i use the wrong concept to predict e-commerce trust? modeling the risk-related effects of trust versus distrust concepts, *in* 'System Sciences, 2003. Proceedings of the 36th Annual Hawaii International Conference on', IEEE, pp. 10–pp.

[101] Min, H. and Galle, W. [2003], 'E-purchasing: profiles of adopters and nonadopters', *Industrial Marketing Management* **32**(3), 227–233.
URL: *http://www.ingentaconnect.com/content/els/00198501/2003/00000032/*

[102] Mitleton-Kelly, E. [2006], *IT legacy systems: enabling environments that reduce the legacy problem: a complexity perspective*, John Wiley & Sons, Ltd.

[103] Montazemi, A. R. [1988], 'Factors affecting information satisfaction in the context of the small business environment', *Mis Quarterly* pp. 239–256.

[104] Moore, D. [2002], 'Education levels: Nine predominantly islamic countries.'.
URL: *http://www.gallup.com/poll/6046/education-levels-nine-...*

[105] Morgan, R. M. and Hunt, S. D. [1994], 'The commitment-trust theory of relationship marketing', *the journal of marketing* **1**(46), 20–38.

[106] Mukherjee, A. and Nath, P. [2003], 'A model of trust in online relationship banking', *International Journal of Bank Marketing* **21**(1), 5–15.

[107] Parahoo, K. [1997], 'Nursing research: Principles', *Process and IssuesMacmillan, London* .

[108] Pavlou, P. A. [2002], 'Institution-based trust in interorganizational exchange relationships: the role of online b2b marketplaces on trust formation', *The Journal of Strategic Information Systems* **11**(3), 215–243.

[109] Pavlou, P. A. [2003], 'Consumer acceptance of electronic commerce: integrat-

ing trust and risk with the technology acceptance model', *International journal of electronic commerce* **7**(3), 101–134.

[110] Pennington, R., Wilcox, H. D. and Grover, V. [2003], 'The role of system trust in business-to-consumer transactions', *Journal of Management Information Systems* **20**(3), 197–226.

[111] Pikkarainen, T., Pikkarainen, K., Karjaluoto, H. and Pahnila, S. [2004], 'Consumer acceptance of online banking: an extension of the technology acceptance model', *Internet research* **14**(3), 224–235.

[112] Proctor, S. [1998], 'Linking philosophy and method in the research process: the case for realism', *Nurse Researcher* **5**, 73–90.
URL: *http://www4.caes.hku.hk/acadgrammar/general/organize/hourglas.htm*

[113] Ramage, M. [2006], 'Forms and processes of information systems evolution'.

[114] Ramage, M. and Munro, M. [2000], Its not just about old software: a wider view of legacy systems, *in* P. Henderson, ed., 'Systems Engineering for Business Process Change', Springer, pp. 279–290.

[115] Resnick, P. and Zeckhauser, R. [2002], 'Trust among strangers in internet transactions: Empirical analysis of ebay?s reputation system', *Advances in Applied Microeconomics A Research Annual* **11**(12), 127–157.
URL: *http://www.emeraldinsight.com/books.htm?chapterid=1782046&show=pdf*

[116] Reverberi, C., Bonatti, L. L., Frackowiak, R. S., Paulesu, E., Cherubini, P. and Macaluso, E. [2012], 'Large scale brain activations predict reasoning profiles', *NeuroImage* **59**(2), 1752–1764.

[117] Ridley, M. [2004], *Evolution*, Wiley.
URL: *http://books.google.com.sa/books?id=HCh7n6zuWeUC*

[118] Rogers, E. M. [2010], *Diffusion of innovations*, New York: Free Press.

[119] Rotter, J. B. [1967], 'A new scale for the measurement of interpersonal trust1', *Journal of personality* **35**(4), 651–665.

[120] Rousseau, D. M., Sitkin, S. B., Burt, R. S. and Camerer, C. [1998], 'Not so different after all: A cross-discipline view of trust.', *Academy of management review* **23**(3), 393–404.

[121] Safeena, R., Date, H. and Kammani, A. [2011], 'Internet banking adoption in an emerging economy: Indian consumer's perspective.', *International Arab Journal of e-Technology* **2**(1).

[122] Shankar, V., Urban, G. L. and Sultan, F. [2002], 'Online trust: a stakeholder perspective, concepts, implications, and future directions', *The Journal of strategic information systems* **11**(3), 325–344.

[123] Shih, Y.-Y. [July2007], The study of customer attitude towards internet banking based on the theory of planned behavior, *in* 'Proceedings of the BAI 2007 International Conference on Business and Information', Nation Chia Tung University, pp. 11–13.

[124] Stake, R. [1994], 'Case studies: I nk denzin and ys lincoln (red) handbook of qualitative research s 237-247'.

[125] Stake, R. E. [1995], 'The art of case study research'.

[126] Standifird, S. S. [2001], 'Reputation and e-commerce: ebay auctions and the asymmetrical impact of positive and negative ratings', *Journal of Management* **27**(3), 279–295.
URL: *http://jom.sagepub.com/content/27/3/279.abstract*

[127] Suh, B. and Han, I. [2002], 'Effect of trust on customer acceptance of internet banking', *Electronic Commerce Research and Applications* **1**(34), 247 – 263.
URL: *http://www.sciencedirect.com/science/article/pii/S1567422302000170*

[128] Suh, B. and Han, I. [2003], 'The impact of customer trust and perception of security control on the acceptance of electronic commerce', *International Journal of electronic commerce* **7**, 135–161.

[129] Sulliva, J. [n.d.], pp. 215–416.
URL: *http://www.blurtit.com/q305833.htm*

[130] Swol, L. M. and Sniezek, J. A. [2005], 'Factors affecting the acceptance of expert advice', *British Journal of Social Psychology* **44**(3), 443–461.

[131] Taylor, F. [2009], 'Early century management consultant', The Wall Street Journal Bookshelf.
URL: *http://www.cftech.com/BrainBank/TRIVIABITS/FredWTaylor.html*

[132] Taylor, S. and Todd, P. A. [1995], 'Understanding information technology usage: A test of competing models', *Information systems research* **6**(2), 144–176.

[133] Teo, T. S. [2001], 'Demographic and motivation variables associated with internet usage activities', *Internet Research* **11**(2), 125–137.

[134] *The Hourglass: a dynamic organisational model* [2012].
URL: *http://www4.caes.hku.hk/acadgrammar/general/organize/hourglas.htm (Accessed: 1/10/2012)*

[135] Thompson, A. [2011 October], 'How to write business requirements specifications part 1'.
URL: *http://www.klariti.com/business-writing/business-requirements-specifications-1/*

[136] Thompson, M., Ellis, R., Wildavsky, A. B. and Thompson, M. [1990], *Cultural theory*, Westview Press Boulder.

[137] Tivnan, B. F. [2005], Coevolutionary dynamics and agent-based models in organization science, *in* 'Simulation Conference, 2005 Proceedings of the Winter', IEEE, pp. 9–pp.

[138] Trocchia, P. J. and Janda, S. [2000], 'A phenomenological investigation of internet usage among older individuals', *Journal of consumer marketing* **17**(7), 605–616.

[139] Tsoukas, H. and Knudsen, C. [2005], *The Oxford handbook of organization theory*, Oxford Handbooks Online.

[140] Vaidya, A. V. [2010], The implications of organizational context for Information Systems and Technology strategy formulation, PhD thesis, A study of socio-political factors in global corporations.University of Bradford.
URL: *http://bradscholars.brad.ac.uk/handle/10454/5187*

[141] Vasya, K. and Jonasson, P. [2006], 'Quality online banking services', p. 79.

[142] Venkatesh, V. and Davis, F. D. [2000], 'A theoretical extension of the technology acceptance model: four longitudinal field studies', *Management science* **46**(2), 186–204.

[143] Wakefield R.L. Stocks, M. W. W. [2004.], 'The role of website characteristics in initial trust formation', *Journal of Computer Information Systems* **43**(1), 94–103.

[144] Wandersman, A., Duffy, J., Flaspohler, P., Noonan, R., Lubell, K., Stillman, L., Blachman, M., Dunville, R. and Saul, J. [2008], 'Bridging the gap between prevention research and practice: The interactive systems framework for dissemination and implementation', *American journal of community psychology* **41**(3-4), 171–181.

[145] Watanabe, C. and Hobo, M. [2004], 'Creating a firm self-propagating function for advanced innovation-oriented projects: lessons from erp', *Technovation* **24**(6), 467–481.

[146] Weick, K. E. [1976], 'Educational organizations as loosely coupled systems', *Administrative science quarterly* pp. 1–19.

[147] Williams, G. [2009], 'It's official: America loves online king'.
URL: *http://www.walletpop.com/blog/2009/09/23/its-official-america...*

[148] Yamagishi, T. and Yamagishi, M. [1994], 'Trust and commitment in the united states and japan', *Motivation and emotion* **18**(2), 129–166.

[149] Yin, R. K. [2008], *Case study research: Design and methods*, Vol. 5, 2 edn, SAGE Publications, Incorporated.

[150] Yin, Y. B. and Faziharudean, T. M. [2010], 'Factors affecting customer loyalty of using internet banking in malaysia', *Journal of Electronic Banking Systems* pp. 1–21.

[151] Yiu, C. S., Grant, K. and Edgar, D. [2007], 'Factors affecting the adoption of internet banking in hong kongimplications for the banking sector', *International Journal of Information Management* **27**(5), 336–351.
URL: *http://linkinghub.elsevier.com/retrieve/pii/S026840120700045X*

[152] Yoon, D., Cropp, F. and Cameron, G. [2002], 'Building relationships with portal users: the interplay of motivation and relational factors', *Journal of Interactive Advertising* **3**(1), 1–18.

[153] Yousafzai, S. Y., Pallister, J. G. and Foxall, G. R. [2003], 'A proposed model of e-trust for electronic banking', *Technovation* **23**(11), 847–860.

[154] Zedan, H., Zhou, S., Sampat, N., Chen, X., Cau, A. and Yang, H. [2001], K-mediator: Towards evolving information systems, *in* 'Software Maintenance, 2001. Proceedings. IEEE International Conference on', IEEE, pp. 520–527.

[155] Zeffane, R. and Cheek, B. [1993], 'Profiles and correlates of computer usage: A study of the australian telecommunications industry', *Computers in Industry* **22**(1), 53 – 69.
URL: *http://www.sciencedirect.com/science/article/pii/016636159390081B*

[156] Zhang, P. and von Dran, G. M. [2000], 'Satisfiers and dissatisfiers: A two-factor model for website design and evaluation', *Journal of the American Society for Information Science* **51**(14), 1253–1268.

[157] Zucker, L. G. [1986], 'Production of trust: Institutional sources of economic structure, 1840–1920.', *Research in organizational behavior* **8**, 53–111.

Appendix A

Online Trust Questionnaire

I am a PhD student in the Technology department (DE MONTFORT UNIVERSITY UK). This survey will investigate user's opinion towards trust in online banking. Please take a few minute to answer the following questions. The information are given will be confidence and will be used for research purposes only Thank you.

A.1 Personal information

1. Gender
    - Male □
    - Female □
2. Age
    - 20-39 □
    - >40 □
3. Education
    - Undergraduate □
    - Postgraduate□

4. What is the name of your bank
    - International □
    - National □
5. Do you have an online bank account
    - Yes □
    - No (end fquestionnaire)□

A.2 Personal Experience

1. Have you ever access to your bank account through the bank website?
    - Yes □
    - No (end of questionnaire) □
2. How many times did you access your bank account in the last three months?
    - 1-19□
    - 20-30□
3. For how many years you are using Internet?
    - 1-10□
    - >10 □

A.3 Disposition to trust

The following questions will investigate your trust issue

4. Do you find it easy to trust individuals and companies
    - Yes □
    - No□

5. Do you trust your e- banking even you saw it a fraud happened?
   - Yes □
   - No□
6. Do you feel that bank website is reliable?
   - Yes □
   - No□

A.4 Reputation

7. Is your online bank service well known?
   - No □
   - Yes □
8. Do you know about your e-bank services through?
   - Friends & TV & Newspapers□
   - Bank□
9. Does your bank have a good reputation?
   - Yes□
   - No□

A.5 Trusting belief

10. Do you think that the e-bank will keep to its commitments?
    - Yes□
    - No□
11. Do you feel that the e-bank perform business in a proper way?

- No□
- Yes□

12. When you want to make transactions through your bank do you prefer to do It?

- Online □
- In branch□

A.6 Structural assurance

13. Do you feel that technology used by online service improves your assurance of The website function?

- No□
- Yes □

14. Which of these factors is more important for you when you're using the website?

- Security & Contents □
- Navigability & Ease of use □

15. Your online participation will be depend on

- Website structure□
- Website text□

16. Do you think that security measures (e.g. Encryption, personal data pirates-Ton) provides a safe environment for your transaction?

- Yes□
- No□

17. Which of the following would enhance your participation for e-banking?

- Needles text website □

- Multifunctional (e.g. Animation, multimedia information) □

18. Do you feel that there is enough information on your bank web site to assure You that this e-bank is real?
    - No□
    - Yes□
19. Do you feel that your logon process is secure?
    - Yes□
    - No□
20. Do you think that the e-bank website react trust?
    - No□
    - Yes □
21. website structure will
    - Enhance your feel good factor□
    - Reduce your feel-factor□
22. Which of the following will increase your trust with online bank?
    - services□
    - Security□
    - Multiservice□
23. Continuous modification of the website will improve your trust?
    - Yes □
    - No □
24. You use online transaction because it reduces time?
    - Yes□
    - No□

A.7 Perceived site quality

25. When do we mention the word trust which one of these do you understand
    - Security □
    - Navigability □
    - Privacy □
26. Do you trust the bank website?
    - Yes□
    - No□
27. Do you feel that the e-bank is totally free of errors?
    - Yes□
    - No □
28. Do you believe that by looking at website does it reflects the trust?
    - Yes□
    - No□
29. Web site quality is suggested to increase the users' trust?
    - Yes□
    - No□
30. Do you think that presence of bank logo will indicate the legal website?
    - Yes □
    - No□
31. Can you distinguish between the mimic website and the original through
    - URL www.BankName.com□
    - Contents & Professional structure□

32. The professional website structure will increase your trust?

    - Yes□
    - No□

Thank you

Appendix B

I am a PhD student in the Technology department (DE MONTFORT UNIVERSITY UK). This survey will investigate user's opinion towards trust in online banking. Please take a few minute to answer the following questions. The information are given will be confidence and will be used for research purposes only Thank you.

B.1 Personal information

1. Gender
    - Male □
    - Female □√
2. Age
    - 20-39 □
    - >40 □√
3. Education
    - Undergraduate □
    - Postgraduate□√
4. What is the name of your bank (Samba)
    - International □
    - National □√

5. Do you have an online bank account

   - Yes □√
   - No (end fquestionnaire)□

B.2 Personal Experience

1. Have you ever access to your bank account through the bank website?

   - Yes □√
   - No (end of questionnaire) □

2. How many times did you access your bank account in the last three months?

   - 1-19□√
   - 20-30□

3. For how many years you are using Internet?

   - 1-10□√
   - >10 □

B.3 Disposition to trust

The following questions will investigate your trust issue

4. Do you find it easy to trust individuals and companies

   - Yes □√
   - No□

5. Do you trust your e- banking even you saw it a fraud happened?

   - Yes □√
   - No□

6. Do you feel that bank website is reliable?

   - Yes □√
   - No□

B.4 Reputation

7. Is your online bank service well known?

   - No □
   - Yes □√

8. Do you know about your e-bank services through?

   - Friends & TV & Newspapers□
   - Bank□√

9. Does your bank have a good reputation?

   - Yes□√
   - No□

B.5 Trusting belief

10. Do you think that the e-bank will keep to its commitments?

    - Yes□√
    - No□

11. Do you feel that the e-bank perform business in a proper way?

    - No□
    - Yes□√

12. When you want to make transactions through your bank do you prefer to do It?

    - Online □
    - In branch□√

B.6 Structural assurance

13. Do you feel that technology used by online service improves your assurance of The website function?

    - No□
    - Yes □√

14. Which of these factors is more important for you when you're using the website?

    - Security & Contents □√
    - Navigability & Ease of use □

15. Your online participation will be depend on

    - Website structure□√
    - Website text□

16. Do you think that security measures (e.g. Encryption, personal data pirates-Ton) provides a safe environment for your transaction?

    - Yes□√
    - No□

17. Which of the following would enhance your participation for e-banking?

    - Needles text website □
    - Multifunctional (e.g. Animation, multimedia information) □√

18. Do you feel that there is enough information on your bank web site to assure You that this e-bank is real?
    - No□
    - Yes□√
19. Do you feel that your logon process is secure?
    - Yes□√
    - No□
20. Do you think that the e-bank website react trust?
    - No□
    - Yes □√
21. website structure will
    - Enhance your feel good factor□√
    - Reduce your feel-factor□
22. Which of the following will increase your trust with online bank?
    - services□
    - Security□√
    - Multiservice□
23. Continuous modification of the website will improve your trust?
    - Yes □√
    - No □
24. You use online transaction because it reduces time?
    - Yes□√
    - No□

B.7 Perceived site quality

25. When do we mention the word trust which one of these do you understand
    - Security □√
    - Navigability □
    - Privacy □
26. Do you trust the bank website?
    - Yes□√
    - No□
27. Do you feel that the e-bank is totally free of errors?
    - Yes□
    - No □√
28. Do you believe that by looking at website does it reflects the trust?
    - Yes□√
    - No□
29. Web site quality is suggested to increase the users' trust?
    - Yes□√
    - No□
30. Do you think that presence of bank logo will indicate the legal website?
    - Yes □√
    - No□
31. Can you distinguish between the mimic website and the original through
    - URL www.BankName.com□√
    - Contents & Professional structure□

32. The professional website structure will increase your trust?

    - Yes□√
    - No□

Thank you

I am a PhD student in the Technology department (DE MONTFORT UNIVERSITY UK). This survey will investigate user's opinion towards trust in online banking. Please take a few minute to answer the following questions. The information are given will be confidence and will be used for research purposes only Thank you.

B.8 Personal information

1. Gender
    - Male □√
    - Female □
2. Age
    - 20-39 □√
    - >40 □
3. Education
    - Undergraduate □√
    - Postgraduate□
4. What is the name of your bank (HSBC)
    - International □√
    - National □
5. Do you have an online bank account
    - Yes □√
    - No (end fquestionnaire)□

B.9 Personal Experience

1. Have you ever access to your bank account through the bank website?

- Yes □√
- No (end of questionnaire) □

2. How many times did you access your bank account in the last three months?
   - 1-19□√
   - 20-30□
3. For how many years you are using Internet?
   - 1-10□√
   - >10 □

B.10 Disposition to trust

The following questions will investigate your trust issue

4. Do you find it easy to trust individuals and companies
   - Yes □
   - No□√
5. Do you trust your e- banking even you saw it a fraud happened?
   - Yes □
   - No□ √
6. Do you feel that bank website is reliable?
   - Yes □√
   - No□

B.11 Reputation

7. Is your online bank service well known?

- No □
- Yes □√

8. Do you know about your e-bank services through?
   - Friends & TV & Newspapers□√
   - Bank□
9. Does your bank have a good reputation?
   - Yes□√
   - No□

B.12 Trusting belief

10. Do you think that the e-bank will keep to its commitments?
    - Yes□√
    - No□
11. Do you feel that the e-bank perform business in a proper way?
    - No□
    - Yes□√
12. When you want to make transactions through your bank do you prefer to do It?
    - Online □
    - In branch□√

B.13 Structural assurance

13. Do you feel that technology used by online service improves your assurance of The website function?

- No□
- Yes □√

14. Which of these factors is more important for you when you're using the website?
    - Security & Contents □√
    - Navigability & Ease of use □
15. Your online participation will be depend on
    - Website structure□
    - Website text□√
16. Do you think that security measures (e.g. Encryption, personal data pirates-Ton) provides a safe environment for your transaction?
    - Yes□√
    - No□
17. Which of the following would enhance your participation for e-banking?
    - Needles text website □
    - Multifunctional (e.g. Animation, multimedia information) □√
18. Do you feel that there is enough information on your bank web site to assure You that this e-bank is real?
    - No□√
    - Yes□
19. Do you feel that your logon process is secure?
    - Yes□√
    - No□
20. Do you think that the e-bank website react trust?
    - No□

- Yes □√

21. website structure will
    - Enhance your feel good factor□√
    - Reduce your feel-factor□
22. Which of the following will increase your trust with online bank?
    - services□√
    - Security□
    - Multiservice□
23. Continuous modification of the website will improve your trust?
    - Yes □√
    - No □
24. You use online transaction because it reduces time?
    - Yes□√
    - No□

B.14 Perceived site quality

25. When do we mention the word trust which one of these do you understand
    - Security □
    - Navigability □
    - Privacy □√
26. Do you trust the bank website?
    - Yes□
    - No□√
27. Do you feel that the e-bank is totally free of errors?

- Yes□
- No □√

28. Do you believe that by looking at website does it reflects the trust?
    - Yes□√
    - No□
29. Web site quality is suggested to increase the users' trust?
    - Yes□√
    - No□
30. Do you think that presence of bank logo will indicate the legal website?
    - Yes □√
    - No□
31. Can you distinguish between the mimic website and the original through
    - URL www.BankName.com□
    - Contents & Professional structure□√
32. The professional website structure will increase your trust?
    - Yes□√
    - No□

Thank you

Appendix C

Gender

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	M	51	51.0	51.0	51.0
	F	49	49.0	49.0	100.0
	Total	100	100.0	100.0	

Table C.1: Number of male and female

Age

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	20-39	60	60.0	60.0	60.0
	>40	40	40.0	40.0	100.0
	Total	100	100.0	100.0	

Table C.2: Age group distribution

Education

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Under-graduate	37	37.0	37.0	37.0
Post-graduate	63	63.0	63.0	100.0
Total	100	100.0	100.0	

Table C.3: Education distribution in all cases

Bank Name

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	National Bank	56	56.0	56.0	56.0
	International	44	44.0	44.0	100.0
	Total	100	100.0	100.0	

Table C.4: Number of bank customers

Online Bank
Account

		Frequency	percent	Valid Percent	Cumulative Percent
Valid	Yes	77	77.0	77.0	77.0
	No	23	23.0	23.0	100.0
	Total	100	100.0	100.0	

Table C.5: Number of online customers

Access to online
Bank Account

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	76	76.0	98.7	98.7
	No	1	1.0	1.3	100.0
	Total	77	77.0	100.0	
Missing	99	23	23.0		
	Total	100	100.0		

Table C.6: Number of customers accessing their account

Time access bank account

	Frequency	Percent	Valid Percent	Cumulative Percent	
Valid	1-9	58	58.0	75.3	75.3
	20-30	19	19.0	24.7	100.0
	Total	77	77.0	100.0	
Mising	999	23	23.0		
	Total	100	100.0		

Table C.7: Frequent use for online bank service by customers

Internet experience year using

	Frequency	Percent	Valid Percent	Cumulative Percent	
Valid	1-10	59	59.0	76.6	76.6
	>10	18	18.0	23.4	100.0
	Total	77	77.0	100.0	
Missing	999	23	23.0		
	Total	100	100.0		

Table C.8: Internet experience for customers by years

Easy to trust

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	48	48.0	62.3	62.3
	NO	29	29.0	37.7	100.0
	Total	77	77.0	100.0	
Missing	99	23	23.0		
	Total	100	100.0		

Table C.9: Trust ability

E-bank trust in case of fraud

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	61	61.0	79.2	79.2
	NO	16	16.0	20.8	100.0
	Total	77	77.0	100.0	
Missing	99	23	23.0		
	Total	100	100.0		

Table C.10: E-bank trust in case of fraud

Bank Website reliabl

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	73	73.0	94.8	94.8
	NO	4	4.0	5.2	100.0
	Total	77	77.0	100.0	
Missing	999	23	23.0		
	Total	100	100.0		

Table C.11: Bank website reliability

Is your online bank service is well known

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	73	73.0	94.8	94.8
	No	4	4.0	5.2	100.0
	Total	77	77.0	100.0	
Missing	999	23	23.0		
	Total	100	100.0		

Table C.12: Online bank service

Source of e-bank services

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Friends,TV and Newspapers	22	22.0	28.6	28.6
	Bank	55	55.0	71.4	100.0
	Total	77	77.0	100.0	
Missing	999	23	23.0		
	Total	100	100.0		

Table C.13: Source of e-bank service

Your Bank has a good Reputation

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	73	73.0	94.8	94.8
	No	4	4.0	5.2	100.0
	Total	77	77.0	100.0	
Missing	999	23	23.0		
	Total	100	100.0		

Table C.14: Bank reputation

E-bank keep its commitment

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	73	73.0	94.8	94.8
	No	4	4.0	5.2	100.0
	Total	77	77.0	100.0	
Missing	999	23	23.0		
	Total	100	100.0		

Table C.15: E-bank commitment

E-bank performed
business
in a proper way

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	72	72.0	93.5	93.5
	No	5	5.0	6.5	100.0
	Total	77	77.0	100.0	
Missing	999	23	23.0		
	Total	100	100.0		

Table C.16: E-bank business performance

When you make transaction
you do it through

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Online	59	59.0	76.6	76.6
	In branch	18	18.0	23.4	100.0
	Total	77	77.0	100.0	
Missing	999	23	23.0		
	Total	100	100.0		

Table C.17: Transactions through the bank

Technology used for
online service
improve your assurance

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	72	72.0	93.5	93.5
	No	5	5.0	6.5	100.0
	Total	77	77.0	100.0	
Missing	999	23	23.0		
	Total	100	100.0		

Table C.18: Technology and customers assurance

Which factors are important when use website

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Security and Contents	68	68.0	88.3	88.3
	Navigability	9	9.0	11.7	100.0
	Total	77	77.0	100.0	
Missing	999	23	23.0		
	Total	100	100.0		

Table C.19: Important factors for web customers

Your participation will depend on

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Website Structure	65	65.0	84.4	84.4
	Website text	12	12.0	15.6	100.0
	Total	77	77.0	100.0	
Missing	999	23	23.0		
	Total	100	100.0		

Table C.20: Online participants

Security measures provide save environment

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	70	70.0	90.9	90.0
	No	7	7.0	9.1	100.0
	Total	77	77.0	100.0	
Missing	999	23	23.0		
	Total	100	100.0		

Table C.21: Security measure and safety envirnoment

Enhance your particpant

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Nedles text web	22	22.0	28.6	28.6
	Multifunctional	55	55.0	71.4	100.0
	Total	77	77.0	100.0	
Missing	999	23	23.0		
	Total	100	100.0		

Table C.22: Enhance your particpant

Information in
website assure you

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	70	70.0	90.9	90.9
	No	7	7.0	9.1	100.0
	Total	77	77.0	100.0	
Missing	999	23	23.0		
	Total	100	100.0		

Table C.23: Website information and customers assurance

Your logon is
secure

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	72	72.0	93.5	93.5
	No	5	5.0	6.5	100.0
	Total	77	77.0	100.0	
Missing	999	23	23.0		
	Total	100	100.0		

Table C.24: Logon and security

Bank Website reflect trust

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	69	69.0	89.6	89.6
	No	8	8.0	10.4	100.0
	Total	77	77.0	100.0	
Missing	999	23	23.0		
	Total	100	100.0		

Table C.25: Bank website and trust

Website structure will

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Enhance feel good factor	70	70.0	90.9	90.9
	Reduce feel good factor	7	7.0	9.1	100.0
	Total	77	77.0	100.0	
Missing	999	23	23.0		
	Total	100	100.0		

Table C.26: website structure and customer feel good factor

Which will increase your trust

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Security	69	69.0	89.6	89.6
	Multi service	8	8.0	10.4	100.0
	Total	77	77.0	100.0	
Missing	999	23	23.0		
	Total	100	100.0		

Table C.27: Factors enhancing customer trust

Website modification will improve your trust

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	68	68.0	88.3	88.3
	No	9	9.0	11.7	100.0
	Total	77	77.0	100.0	
Missing	999	23	23.0		
	Total	100	100.0		

Table C.28: website modification and trust

You use online transaction
because it
reduce time

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	75	75.0	97.4	97.4
	No	2	2.0	2.6	100.0
	Total	77	77.0	100.0	
Missing	999	23	23.0		
	Total	100	100.0		

Table C.29: Online transaction reduce time

Word trust means trust

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Security	60	60.0	77.9	77.9
	Navigability and Privacy	17	17.0	22.1	100.0
	Total	77	77.0	100.0	
Missing	99	23	23.0		
	Total	100	100.0		

Table C.30: Meanings of the word trust

Do you trust bank
Web site

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	70	70.0	90.9	90.9
	No	7	7.0	9.1	100.0
	Total	77	77.0	100.0	
Missing	999	23	23.0		
	Total	100	100.0		

Table C.31: Bank web site trust

E-bank Free from errors

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	31	31.0	40.3	40.3
	No	46	46.0	59.7	100.0
	Total	77	77.0	100.0	
Missing	999	23	23.0		
	Total	100	100.0		

Table C.32: E-bank free from errors

Website reflect trust

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	55	55.0	71.4	71.4
	No	22	22.0	28.6	100.0
	Total	77	77.0	100.0	
Missing	999	23	23.0		
	Total	100	100.0		

Table C.33: website reflect trust

Web site quality increase trust

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	64	64.0	83.1	83.1
	No	13	13.0	16.9	100.0
	Total	77	77.0	100.0	
Missing	999	23	23.0		
	Total	100	100.0		

Table C.34: web site quality increase trust

Bank Logo indicate Legal website

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	57	57.0	74.0	74.0
	No	20	20.0	26.0	100.0
	Total	77	77.0	100.0	
Missing	999	23	23.0		
	Total	100.0	100.0		

Table C.35: Bank logo indicate Legal website

Mimic web site distinguish from original

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	URL www.bank name	36	36.0	46.8	46.8
	Content and Professional structure	41	41.0	53.2	100.0
	Total	77	77.0	100.0	
Missing	999	23	23.0		
	Total	100	100.0		

Table C.36: Mimic web site distinguish

Professional website increase trust

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	68	68.0	88.3	88.3
	No	9	9.0	11.7	100.0
	Total	77	77.0	100.0	
Mising	999	23	23.0		
	Total	100	100.0		

Table C.37: Proffisional increase trust

Appendix D

Discriptive analyses of findings

BETWEEN SUBJECT FACTORS

		Value Label	N
Gender	1	M	51
	2	F	49
Age	1	20-39	52
	2	>40	25
Education	1	Under	24
	2	Post	53
Bank Name	1	National Bank	40
	2	International	37
Online Bank Ac	1	Yes	77
Bank Acc Acc	1	Yes	76
	2	No	1
Time Acc Bank Ac	1	1-19	58
	2	20-30	19
Years Using Inter	1	1-10	59
	2	>10	18
Easy To Trust	1	Yes	48
	2	No	29
Do You the services through	1	Frindes,Tv andNewspaper	22
	2	Bank	55
Does Your bank has a goo reputation	1	Yes	73
	2	No	4
E-bank Perform Business in a proper way	1	Yes	72
	2	No	5

Table D.1: Discriptive analyses findings Table A

BETWEEN SUBJECT FACTORS

		Value Label	N
When you make transaction you o it through	1	Online	59
	2	In branch	18
Technology used for online service your assurance	1	Yes	72
	2	No	5
Your participition will depend on	1	Website structure	65
	2	Website text	12
Security mesures provide save envirnomant	1	Yes	70
	2	No	7
Which will inhance your particepant	1	Neddle's text website	22
	2	Multifunctional	55
Information website assure you	1	Yes	70
	2	No	7
Your logon is secure	1	Yes	72
	2	No	5
Bank website reflect trust	1	Yes	69
	2	No	8
Website structure will	1	Enhance your feel factor	70
	2	Reduce your feel factor	7

Table D.2: Discriptive analyses findings Table B

BETWEEN SUBJECT FACTORS

		Value Label	N
Which will increase your trust	1	Security	60
	2	Multiservice	8
Website modification will improve your trust	1	Yes	68
	2	**No**	9
Yo use online transaction to reduce time	1	Yes	75
	2	No	2
Word trust mean	1	Security	60
	2	Navigability and Privacy	17
Do you trust Bank website	1	Yes	70
	2	No	7
Do you feel bank website free from errors	1	Yes	31
	2	No	47
By looking at website reflect trust	1	Yes	55
	2	No	22
Website quality increase user trust	1	Yes	64
	2	No	13
Bank logo indicate legal website	1	Yes	57
	2	No	20
Mimic website can distinguish from the original	1	URL www.bank name	36
	2	Content and professional structure	41
Professional website increase your trust	1	Yes	68
	2	No	9

Table D.3: Descriptive analysis of finding Table C

Appendix E

Frequency Table

Case No

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0	1	1.0	1.0	1.0
	1	1	1.0	1.0	2.0
	2	1	1.0	1.0	3.0
	3	1	1.0	1.0	4.0
	4	1	1.0	1.0	5.0
	5	1	1.0	1.0	6.0
	6	1	1.0	1.0	7.0
	7	1	1.0	1.0	8.0
	8	1	1.0	1.0	9.0
	9	1	1.0	1.0	10.0
	10	1	1.0	1.0	11.0
	11	1	1.0	1.0	12.0
	12	1	1.0	1.0	13.0
	13	1	1.0	1.0	14.0
	14	1	1.0	1.0	15.0
	15	1	1.0	1.0	16.0
	16	1	1.0	1.0	17.0
	17	1	1.0	1.0	18.0
	18	1	1.0	1.0	19.0
	19	1	1.0	1.0	20.0

Table E.1: Frequency Table A

Case No

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0	1	1.0	1.0	1.0
	20	1	1.0	1.0	21.0
	21	1	1.0	1.0	222.0
	22	1	1.0	1.0	23.0
	23	1	1.0	1.0	24.0
	24	1	1.0	1.0	25.0
	25	1	1.0	1.0	26.0
	26	1	1.0	1.0	27.0
	27	1	1.0	1.0	28.0
	28	1	1.0	1.0	29.0
	29	1	1.0	1.0	30.0
	30	1	1.0	1.0	31.0
	31	1	1.0	1.0	32.0
	32	1	1.0	1.0	33.0
	33	1	1.0	1.0	34.0
	34	1	1.0	1.0	35.0
	35	1	1.0	1.0	36.0
	36	1	1.0	1.0	37.0
	37	1	1.0	1.0	38.0
	38	1	1.0	1.0	39.0
	39	1	1.0	1.0	40.0

Table E.2: Frequency Table B

Case No

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid 40	1	1.0	1.0	40.0
41	1	1.0	1.0	41.0
42	1	1.0	1.0	42.0
43	1	1.0	1.0	43.0
44	1	1.0	1.0	44.0
45	1	1.0	1.0	45.0
46	1	1.0	1.0	46.0
47	1	1.0	1.0	47.0
48	1	1.0	1.0	48.0
49	1	1.0	1.0	49.0
50	1	1.0	1.0	50.0
51	1	1.0	1.0	51.0
52	1	1.0	1.0	52.0
53	1	1.0	1.0	53.0
54	1	1.0	1.0	54.0
55	1	1.0	1.0	55.0
56	1	1.0	1.0	56.0
57	1	1.0	1.0	57.0
58	1	1.0	1.0	58.0
59	1	1.0	1.0	59.0
60	1	1.0	1.0	60.0
61	1	1.0	1.0	61.0
62	1	1.0	1.0	62.0
63	1	1.0	1.0	63.0
64	1	1.0	1.0	64.0
65	1	1.0	1.0	65.0
66	1	1.0	1.0	66.0
67	1	1.0	1.0	67.0
68	1	1.0	1.0	68.0
69	1	1.0	1.0	69.0
70	1	1.0	1.0	70.0
71	1	1.0	1.0	71.0
72	1	1.0	1.0	72.0
73	1	1.0	1.0	73.0
74	1	1.0	1.0	74.0
75	1	1.0	1.0	75.0
76	1	1.0	1.0	76.0
77	1	1.0	1.0	77.0

Table E.3: Frequency Table C

Case No

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid 78	1	1.0	1.0	78.0
79	1	1.0	1.0	79.0
80	1	1.0	1.0	80.0
81	1	1.0	1.0	81.0
82	1	1.0	1.0	82.0
83	1	1.0	1.0	83.0
84	1	1.0	1.0	84.0
85	1	1.0	1.0	85.0
86	1	1.0	1.0	86.0
87	1	1.0	1.0	87.0
88	1	1.0	1.0	88.0
89	1	1.0	1.0	89.0
90	1	1.0	1.0	90.0
91	1	1.0	1.0	91.0
92	1	1.0	1.0	92.0
93	1	1.0	1.0	93.0
94	1	1.0	1.0	94.0
95	1	1.0	1.0	95.0
96	1	1.0	1.0	96.0
97	1	1.0	1.0	97.0
98	1	1.0	1.0	98.0
99	1	1.0	1.0	99.0
100	1	1.0	1.0	100.0

Table E.4: Frequency Table D